HEALTH SCIENCES LIBRARY
UNIVERSITY OF MARYLAND
BALTIMORE

Digitized by the Internet Archive
in 2016 with funding from
The National Endowment for the Humanities and the Arcadia Fund

https://archive.org/details/mississippidocto3511miss

…ITY OF MARYLAND
LIBRARY
JUN 19 57
…OL OF MEDICINE

CIRCULATES AFTER

The MISSISSIPPI Doctor

M.S.M.A.

THE MISSISSIPPI DOCTOR, JUNE, 1957

NO. 1

> *"The roads you travel so briskly*
> *lead out of uity,*
> *and you stu st chiefly because*
> *of its bearin iving present*
> *and its pro e future."*
>
> —Harbord

Library, Univ. of Md. Sch. of
Med., S. E. Corner of Lombard
and Green Sts., Baltimore, Md.

In This Issue

PROBLEMS OF SPLENECTOMY IN PEDIATRIC PRACTICE
Carl H. Smith, M.D.

OCCLUSIVE DISEASE OF THE CEREBRAL VESSELS
J. E. Lofstrom, M.D., J. E. Webster, M.D., and E. S. Gurdjian, M.D.

MISSISSIPPI MEDICINE — CENTURY II
H. C. Ricks, M.D.

ANNUAL ORATION
M. Q. Ewing, M.D.

G

FOR POSITIVE DIURESIS

ROLICTON

- oral b.i.d. dosage
- continuous control of edema

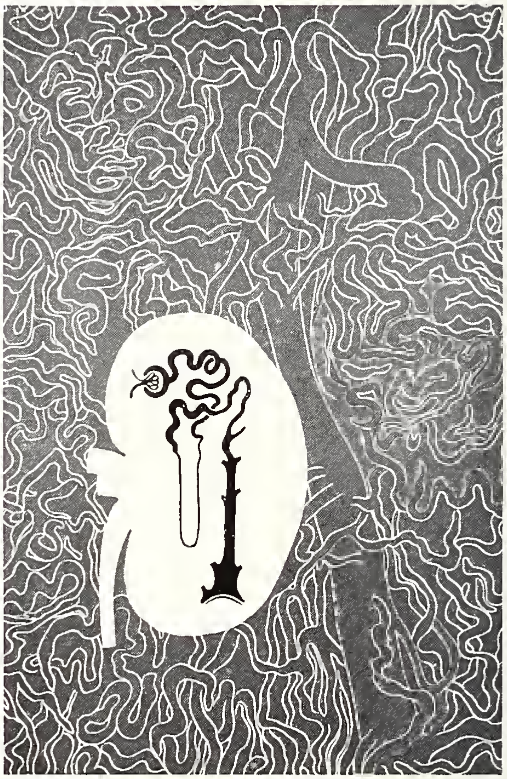
HEALTH SCIENCES LIBRARY
UNIVERSITY OF MARYLAND
BALTIMORE

The new, highly effective oral diuretic, Rolicton, greatly simplifies the task of maintaining an edema-free state in the patient with congestive heart failure. Rolicton meets the criteria for a dependable diuretic: continuous effectiveness, oral administration and clinical safety.

In extensive clinical studies the diuretic response clearly indicates that a majority of patients can be kept edema-free with Rolicton. In these investigations it was noted that side reactions were uncommon. When they did occur they were usually mild.

In most edematous patients Rolicton may be employed as the sole diuretic agent. When used adjunctively in severe cases, Rolicton is also valuable in eliminating the "peaks and valleys" associated with the parenteral administration of mercurial diuretics.

One tablet of Rolicton b.i.d., after meals, is usually adequate for maintenance therapy after the first day's dosage of four tablets. Some patients respond well to one tablet daily. G. D. Searle & Co., Chicago 80, Illinois. Research in the Service of Medicine.



SEARLE

Problems of Splenectomy in Pediatric Practice*

CARL H. SMITH, M.D.†
New York, N. Y.

SPLENECTOMY AT all age periods depends upon the formulation of criteria based on clinical judgment, the application of newer technics and a knowledge of benefits and hazards obtained from rapidly expanding experience and long term follow-up. Within the allotted time it will only be possible to review the more important conditions in which splenectomy is indicated together with associated problems of diagnosis and management. These are varied and complex since the indications are not always sharply defined and considerations of expediency are often debatable. Such a discussion is particularly pertinent in the pediatric age group where critical decisions for removal of the spleen are initially encountered.[1]

A review of the functions of the spleen serves as a frame of reference for appraising deviations from the normal and provides an insight into the pathogenesis of each disorder.

Functions of the Spleen

The spleen removes worn out and fragmented red cells, represents the site of production of lymphocytes and monocytes and in stress situations especially in younger persons, fetal blood foci are reactivated with the resumption of erythropoiesis. The spleen participates in the defense mechanisms of the body by phagocytosis and antibody production mediated by the lymphoid and reticuloendothelial tissue which is concentrated within the splenic pulp.

In contrast to antibodies of a protective nature are the abnormal auto-antibodies produced in the spleen against the patient's own red-cells and platelets observed in some cases of acquired hemolytic anemia and thrombocytopenic purpura respectively. The spleen is involved in auto-immune hemolytic anemia constituting a partial and frequently a major source of antibodies and serves furthermore to remove sensitized red cells from the circulation.

Hypersplenism

The spleen exerts a regulatory influence in the control of blood formation and in the delivery of cellular elements from the bone marrow. This function is greatly exaggerated when the spleen becomes hyperactive, a condition which is termed hypersplenism and implies a functional disturbance and not an anatomic change. Inherent in this concept is the reduction of one or more cellular elements in the peripheral blood with compensatory hyperplasia in the bone marrow of the corresponding cells, the presence of an enlarged spleen, and the expectation that the disorder will be corrected by splenectomy.

The blood disturbances dependent upon hypersplenism have been attributed to either selective sequestration and increased destruction of formed cell elements in the spleen or to an inhibitory influence upon a normal or hyperactive bone marrow presumably through a hormonal mechanism. In either case whether by increased destruction or inhibition, the removal of an abnormally functioning spleen has been shown to restore normal blood levels with varying degrees of success. Hypersplenism is, therefore, associated with neutropenia, thrombocytopenia or anemia or in their various combinations, splenomegaly and a full marrow.

Hypersplenism may be primary when there is no obvious cause for the depletion of blood cell types as in splenic neutropenia, splenic panhematopenia or pancytopenia and idiopathic thrombocytopenic purpura.

Secondary hypersplenism includes those cases in which a recognized underlying condition is present — such as Banti's syndrome, Gaucher's disease and lymphosarcoma. As contrasted with aplastic anemia in which pancytopenia also exists, the bone marrow in primary splenic panhematopenia is hyperplastic and each cellular element is present in normal or increased numbers.

Hereditary Spherocytosis (Congenital Spherocytic Anemia)

The basic defect in hereditary spherocytosis lies in the production of structurally abnormal erythrocytes — namely spherocytes. These cells, because of their globular shape are removed from the circulation and trapped in the splenic pulp where they undergo lysis. The trapping and sequestration of the spheroidal cells is not based on abnormalities of the spleen since the process occurs in the spleen of normal individuals as well as of the patient and of those suffering from diseases other than hereditary spherocytosis. With prolongation of the hemolytic process the spleen enlarges. The

---

†From the Department of Pediatrics, The New York Hospital-Cornell Medical Center.

*The data included in this paper are based on studies supported by grants from the National Institute of Arthritis and Metabolic Disease, United States Public Health Service (RG A-227) (C6), The Children's Blood Foundation, Inc., and Mead Johnson and Company.

excessive rate of red cell destruction produces anemia, hyperbilirubinemia, increased fecal and urinary urobilinogen while compensatory red cell regeneration leads to reticulocytosis, polychromasia and normoblastemia. The disease is inherited from either parent as a Mendelian dominant. The fact that the principal hemolytic focus resides in the spleen is corroborated by the absence of anemia following its removal, although spherocytosis persists.

Hereditary spherocytosis is not to be included as a manifestation of hypersplenism since the primary defect is confined to the conformation of the erythrocyte. So beneficial is splenectomy in this disorder that it has been strongly recommended in all patients regardless of age, and as soon as diagnosis is firmly established. While the spleen has been successfully removed during infancy, evidence is accumulating which may justify postponement in this and other diseases until the patient is two years of age. This qualification is based on the susceptibility to infections which will be discussed in a later section of this paper.

It is sometimes less difficult to convince parents that the child should undergo a splenectomy than for the affected father or mother to agree to a similar operation. The reason for this lies in the fact that the parent while demonstrating microspherocytosis often shows lesser grades of anemia, reflecting a state of compensated hemolytic disease in which the demands of abnormal hemolysis are met by maximum erythropoietic efforts of the bone marrow. The presence of reticulocytosis, however, indicates increased rates of regeneration. Gallstone formation and the occasional development of crises are prone to develop in young and old alike whether the hemoglobin is maintained at normal or moderately reduced levels.

Acquired Hemolytic Anemia

Whereas hereditary spherocytosis is due to an inherent defect in the red cell, there is a group of heterogeneous hemolytic disorders — the acquired hemolytic anemias — due to extra-corpuscular or environmental factors some of which can be identified. These include drugs, physical agents, parasites, bacteria and chemicals which have a direct action on the red cells, and cases in which hemolysis is due to hypersensitivity, for example, to vegetable poisons such as the fava bean.

In addition to cases with a definite etiology are those cases for which no recognized cause can be found. These so-called idiopathic acquired hemolytic anemias may be acute, self-limited and occasionally fulminating, or chronic and marked by repeated attacks of hemolysis followed by remissions. Frequently the chronic case is marked by an insidious onset with a subsequent course of increasing severity. Clinically it is important to separate the primary and idiopathic cases from the secondary or symptomatic cases in which hemolysis is a complication of an underlying disease. These include patients with leukemia, disseminated lupus erythematosus, neoplastic diseases and with virus pneumonia accompanied by the formation of cold antibodies. The hemolytic state in symptomatic cases may be due to an exaggeration of normal hemolytic mechanisms or splenic overactivity.

The serum of patients with both idiopathic and symptomatic acquired hemolytic anemias will generally be found to possess an abnormal red cell antibody which attacks their own as well as normal red cells. With rare exceptions the presence of antibody adsorbed on the patient's red cells is detected by the finding of a positive direct anti-globulin test, (the Coombs' test). A positive Coombs' test in acquired hemolytic anemia in contrast to the negative test in hereditary spherocytosis is frequently helpful in differentiating the two conditions since spherocytosis and reticulocytosis occur in both.

Treatment consists of transfusions, steroids and splenectomy. Transfusions are of temporary benefit but play an important role in tiding the patient over a severe hemolytic episode. The presence of auto-antibodies frequently interferes with the matching of blood. In these cases the least incompatible blood may be reserved for use pending the effect of steroid hormones.

Prior to the advent of ACTH and steroid therapy, great reliance was placed on splenectomy for treatment of chronic idiopathic acquired hemolytic anemia. Results were, however, unpredictable and regarded as successful in approximately 50 per cent of the idiopathic cases but for how long is not always certain.

Since auto-antibodies are produced in large measure by the spleen, the removal of this organ should be expected to result in a sharp decrease in their concentration. The variable effect of splenectomy in many cases indicates, however, that the spleen may not be the sole source of antibody. In some cases the antibody titer decreases sharply after splenectomy and in other cases improvement results even with high antibody titer.

Cases of autoimmune acquired hemolytic anemia especially those of a chronic nature usually respond favorably to hormonal therapy although the permanency of improvement has not yet been thoroughly evaluated. Steroid hormones in adequate dosage (40 to 60 mg. of prednisone in divided doses) represent an effective form of therapy and should receive a thorough trial before splenectomy is considered. A successful response is marked by a fall in the reticulocyte count, a rise in red cells and hemoglobin with a reduction in the number of transfusions or their elimination.

In many cases full clinical and hematologic remissions follow the discontinuance of therapy, with and without splenectomy[2]. In spite of improvement, a positive Coombs' test may persist and prompts an alertness to recurrence of a hemolytic state. No definite period can be recommended when splenectomy should be carried out nor are these well defined criteria upon which to base a decision. At present steroid therapy represents the treatment of choice in management of patients with auto-immune hemolytic anemia, and splenectomy should be reserved for those patients who fail to respond to hormone therapy[3].

Cooley's Anemia (Mediterranean anemia, Thalassemia major)

In other blood disorders splenectomy is undertaken for relief of urgent symptoms traced to a pathologically overactive organ in which no other remedial therapy is available. Severe Mediterranean or Cooley's anemia falls into this category in the stage when an enlarged and burdensome spleen and excessive transfusion requirements coexist. While the fundamental defect in this disease is intracorpuscular, a hemolytic component eventually supervenes which aggravates the anemia. This extracorpuscular defect manifests itself by excessive hemolysis of normal donor cells so that frequent transfusions are necessary[4].

The long term outlook after splenectomy in severe Mediterranean anemias is still so uncertain that the proper selection of patients is of the utmost importance. In the majority of patients with this disorder there are intermittent periods of excessive blood requirements but in a smaller number the need for frequent transfusions persists. Excessive body iron accumulating from multiple transfusions carries the potentiality of hepatic and pancreatic hemochromatosis. The measurement of donor red cell survival by tagging with radioactive chromium offers an insight into the rate at which transfused blood is being destroyed by an extra-corpuscular hemolytic component presumably located in the spleen. In severe Cooley's anemia the beneficial effects are reflected in the material decrease in post-splenectomy transfusion requirements as measured by increased survival of transfused red cells. Postponement of splenectomy until puberty offers the most favorable prospect for prolonged clinical and hematologic improvement[4].

In the occasional child with severe sickle cell anemia with marked and persistent splenomegaly similar considerations apply with respect to splenectomy when transfusion requirements are excessive.

Idiopathic Thrombocytopenic Purpura

Idiopathic thrombocytopenic purpura occurs in two major types one an acute self-limited form, and the other a chronic protracted disease with occasional remissions. Bone marrow examination will determine whether the purpura is secondary to leukemia or aplastic anemia. Banti's syndrome, Gaucher's disease, disseminated lupus erythematosus and other types of secondary hypersplenism are also to be considered. The acute form has a sudden onset frequently after a respiratory infection or following an exanthem such as measles and rubella. Splenomegaly is never marked and if moderate enlargement is present, other diagnoses should be considered, notably leukemia, lymphosarcoma, Banti's syndrome or other conditions associated with hypersplenism.

Of particular importance in planning therapy is the fact that spontaneous remission occurs to the extent of 75 to 85 per cent in children and only 25 to 30 per cent in adults. The majority of cases in children recover within 3 months and a smaller percentage (10-15 per cent) from 4 to 6 months. In children, about 10 per cent develop the chronic form. While there is good evidence that idiopathic thrombocytopenic purpura is based on an immunologic mechanism, circulatory platelet antibodies have not universally been found with standard procedures. However with meticulous attention to technical details, the clinical demonstration of anti-platelet antibodies has been found of significant value in diagnosis and clinical management, and false-positive reactions have been reduced[5].

Despite the assurance that the acute disease in most children runs a favorable course with eventual recovery the possibility of cerebral or other uncontrollable hemorrhage with marked depletion of platelets in the early weeks justifies the administration of steroids from the onset of illness. Regardless of recovery with steroids, blood counts should still be carried out routinely for several months to assure the permanency of the remission.

With excessive purpura and bleeding, bed rest and transfusions of fresh blood, especially for its content of platelets, in addition to steroids and ACTH are advisable. The dosage of steroids is variable and for children an increase for a brief period beyond the usual levels of 40 to 60 mg. of prednisone is divided doses daily may be necessary to obtain a favorable response. If with adequate therapy, thrombocytopenia persists for 6 months or more, especially if this is associated with repeated ecchymoses, splenectomy is then advisable. An expectant policy may be followed beyond the 6 months period if a bleeding tendency is not manifest despite thrombocytopenia. In such children a decision is usually reached during the remainder of the year when platelet levels either return to normal or are eventually associated with clinical symptoms. In one child, prolonged responses to therapy occurred intermittently over a 3-year period and splenectomy had eventually to be undertaken because of bleeding. Occasionally patients will obtain permanent benefit from splenectomy even in the absence of a rise in platelets although final evaluation should be delayed for at least 3 months.

One of the essential criteria for splenectomy is the presence in bone marrow of numerous megakaryocytes, usually without platelet formation. The finding of few or no megakaryocytes warrants a search for an underlying condition. In patients where splenectomy is necessary, preoperative preparation with steroids has been found useful in controlling hemostasis during the procedure by improving capillary fragility[6].

Congestive Splenomegaly — (Banti's Syndrome, Portal Hypertension)

Congestive splenomegaly has replaced the term Banti's syndrome because of the existence of portal hypertension. The obstruction to venous flow may be situated outside of the liver — extrahepatic, or intrahepatic, within the liver, the commonest cause of which is hepatic cirrhosis. In children extrahepatic lesions are the more frequent and are due to cogenital malformation or thrombophlebitis of the veins of the portal system, namely the portal vein and its tributaries.

Recent medical advances have led to an elucidation of the factors entering into the pathogenesis of portal hypertension as well as the development of procedures for the identification of the site of obstruction. An appraisal of liver function, the manometric measurement of portal pressures, and the use of portal venography contribute to the accuracy of diagnosis and facilitate surgical intervention for decompressing the portal area.[7].

Experience has shown that splenectomy for the relief of hypersplenism should not be undertaken unless a venous anastomosis is contemplated. In children this usually consists of splenorenal shunt. Preliminary visualization of portal vessels and estimation of their size can be effected by portal venography. If the vessels are of insufficient caliber a splenorenal shunt may have to be postponed or if urgent a direct portacaval anastomosis is performed. Portal hypertension secondary to cirrhosis of the liver gives a poor prognosis, since the required portacaval shunt has a high operative mortality. In adults portal hypertension is usually a sequence of hepatic disease whereas in childhood it may result from either cause but more frequently from thrombosis of venous branches of the portal system early in life. Portal hypertension is characterized by hemorrhage from the alimentary tract, especially from esophageal varices, hypersplenism with leucopenia, anemia and thrombocytopenia, and hepatic insufficiency.

Splenectomy might be considered the procedure of choice in children with moderate or marked splenomegaly especially when associated with hypersplenism as shown by depression of the circulating blood elements. It is now realized, however, that once the spleen has been removed the splenic vein cannot be used for anastomosis should it later become necessary. Splenectomy alone without a venovenous shunt is indicated only for lesions obstructing the splenic vein are close to the splenic hilum[8].

Splenectomy with a splenorenal shunt is recommended with marked splenomegaly, large caliber splenic vein, hypersplenism, or obliterated portal vein—such as cavernomatous transformation or aplasia of the portal vein. Portacaval shunt is advocated with small caliber splenic veins or cirrhosis of the liver[8].

For adequate treatment a knowledge of the site of portal obstruction is necessary. Hsia and Gellis[9] summarized the differentiation between primary portal hypertension and that which is secondary to cirrhosis of the liver. According to these authors primary portal hypertension is suggested by a history of omphalitis or severe bacterial infection during early infancy followed by an uneventful course until signs of portal hypertension appear, an essentially negative and benign history prior to the onset of signs of portal hypertension, hematemesis and/or splenomegaly as the presenting complaint, an absence of jaundice or other signs of liver disease prior to onset of symptoms and normal liver function tests. In contrast, portal hypertension secondary to cirrhosis of the liver is suggested by positive liver function tests, evidence of a previous history of jaundice or liver enlargement, hepatomegaly, and tenderness of the liver which is prominent and usually appears prior to the onset of splenomegaly, ascites and other evidences of liver failure tending to appear prior to portal hypertension.

Pure Red Cell or Chronic Congenital Aregenerative Anemia

Pure red-cell anemia represents a chronic and usually a congenital aregenerative anemia in which bone marrow failure is confined to erythropoiesis without simultaneous depression of granulocytes, platelets or their precursors. It is most commonly found in infancy and childhood and is characterized by progressive pallor and normochromic, normocytic anemia with a reduction or absence of reticulocytes. Different terms have been applied to this selective form of hypoplastic anemia: pure red-cell anemia, chronic congenital aregenerative anemia, chronic erythrocytic hypoplasia, essential erythroblastopenia, erythrogenesis imperfecta and others.

Major therapy consists of transfusions, ACTH, steroids and splenectomy. Blood transfusions to maintain normal hemoglobin levels have been the only effective and consistent therapy. Cortisone, hydrocortisone, or prednisone are given primary consideration and sporadic cases have been reported in which they have stimulated erythropoiesis. When these agents have received extensive trial without success splenectomy is considered. For those patients in whom there is no evidence of hypersplenism in terms of erythroid hyperplasia of the bone marrow or of a hemolytic component splenectomy is based on the principle that an abnormally functioning spleen may depress the erythropoietic functions of bone marrow. There is less reluctance to remove the spleen when the bone marrow is not entirely devoid of erythroid elements in any stage of development. In any event the procedure may be justified on the basis of a splenic humoral factor which inhibits maturation of precursors either visualized or potentially present in primordial cells such as hematogones. The fear that removal of the spleen deprives the patient of needed resources of erythropoietic tissue is not justified by experience in this disease. Although the majority of cases are not improved by splenectomy, the condition is not aggravated. Occasionally splenectomy alone has a beneficial effect in restoring erythropoiesis. In other cases, cortisone and other therapeutic agents have proven more effective after splenectomy.

The Hazard of Infection in the Splenectomized Child

This paper has thus far delineated the problems involved in deciding on therapeutic value and the most propitious time for splenectomy. In general there was the assurance of freedom from ill-effect when splenectomy was performed for well-defined indications. Because of this feeling of security it seems important to call attention to an aspect which has heretofore received passing attention—namely increased susceptibility to infection in the immediate or remote post-operative period. These untoward circumstances following splenectomy prompt renewed consideration of the role of this organ in the defense mechanisms of the body as has been abundantly demonstrated in the experimental animal.

A total of 43 serious infections in 34 splenectomized children have been encountered, the majority of which have heretofore been unreported[10]. Splenectomy had been undertaken in children with chronic hemolytic anemias, hypersplenism, aregenerative anemia and thrombocytopenic purpura as well as in two healthy children with traumatic rupture of the spleen. The age at which splenectomy was performed extended from 13 months to 17 years. There was no special susceptibility in the patient whose spleen had been removed in infancy.

The infections fell into several well defined clinical categories: meningitis, fulminating infections and sepsis, acute idiopathic pericarditis (confined to Cooley's anemia) and acute bacterial endocarditis. In instances in which bacterial diagnosis was possible, the pneumococcus was the most common offender with meningitis the most frequent clinical type of infection. Other organisms included meningococcus, H. influenzae, E. coli, alpha streptococcus and S. typhimurium. The interval between the operation and the infection ranged between 1 day and 13 years with the majority of episodes two years less. In splenectomized patients in whom determinations were made there was no evidence of a failure to synthesize gamma globulin. What is of interest is the frequency of serious infection in splenectomized infants and children as compared with the relative paucity of this observation in the adult.

The findings suggest more than a fortuitous association between splenectomy and susceptibility to infection. While it is impractical to follow splenectomized children for prolonged periods, the necessity for close supervision for at least two years post-operatively, the period of most frequent incidence of infection becomes obligatory. With the possibility that fulminating and occasionally fatal infections may supervene, such patients should receive immediate and energetic treatment in the event of sudden and severe illness. The number of cases of this complication is avowedly small in comparison with the ever increasing number of splenectomies, but the potential hazards demand that exact criteria be established in selecting patients of the pediatric age for the operation.

SUMMARY

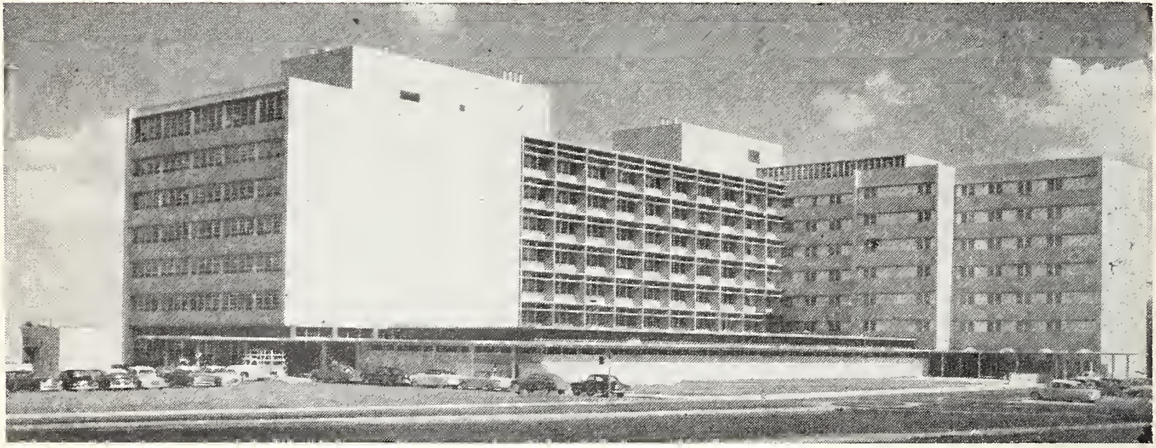
The problems relating to splenectomy in the pediatric age group were reviewed in connection with hereditary spherocytosis, acquired hemolytic anemia, Cooley's anemia, thrombocytopenic purpura, portal hypertension (Banti's disease) and pure red-cell (chronic congenital aregenerative) anemia.

The susceptibility to infections in children in the immediate and remote post-splenectomy period warrants the need for establishing exact criteria in selecting patients of the pediatric age for this operation. In instances where bacterial diagnosis was possible the pneumococcus was the chief offender and meningitis the most frequent clinical type of infection. The need for close supervision of the splenectomized child for at least two years post-operatively was emphasized.

BIBLIOGRAPHY

1. Glenn, F., Cornell, G. N., Smith, C. H., and Schulman, I. Splenectomy in Children with Idiopathic Thrombocytopenic Purpura, Hereditary Spherocytosis, and Mediterranean Anemia. Surg., Gynec. and Obst. 99:689, 1954.
2. Dameshek, W., and Komninos, Z. D. The Present Status of Treatment of Autoimmune Hemolytic Anemia with ACTH and Cortisone. Blood. 11:648, 1956.
3. Chertkow, G., and Dacie, J. V. Results of Splenectomy in Auto-Immune Haemolytic Anemia. Brit J. Haemat. 2:237, 1956.
4. Smith, C. H., Schulman, I., Ando, R. E., and Stern, G. Studies in Mediterranean (Cooley's) Anemia. 1 — Clinical and Hematologic Aspects of Splenectomy, with Special Reference to Fetal Hemoglobin Synthesis. Blood. 10:582, 1955.
5. Tullis, J. A. Identification and Significance of Platelet Antibodies. N.E.J. Med. 255:541, 1956.
6. Greene, R. W., Faloon, W. W., and Lozner, E. L. The Use of ACTH in Preparing Patients with Idiopathic Thrombocytopenic Purpura for Splenectomy. Am. J. Med. Sc. 226:203, 1953.
7. Schuckmell, N., Grove, W. J., and Remenchik, A. P. The Diagnosis of Operable Portal Obstruction in Children. Am. J. Dis. Child. 90:692, 1955.
8. Rousselot, L. M. The Present Status of Surgery for Portal Hypertension. Am. J. Med. 16:874, 1954.
9. Hsia, D. Y., and Gellis, S. S. Portal Hypertension in Infants and Children. Am. J. Dis. Child. 90:290, 1955.
10. Smith, C. H., Erlandson, M., Schulman, I., and Stern, G. Hazard of Severe Infections in Splenectomized Infants and Children. Am. J. Med. — in press.

UNIVERSITY OF MISSISSIPPI SCHOOL OF MEDICINE TO HOLD FIRST COMMENCEMENT



The first commencement for Mississippi's new School of Medicine will be held Sunday, June 16.

Occlusive Disease of the Cerebral Vessels*

J. E. LOFSTROM, M.D.†
J. E. WEBSTER, M.D.
E. S. GURDJIAN, M.D.†
Detroit, Mich.

THROUGHOUT ALL medical history the "stroke" syndrome as manifested by unconsciousness, hemiparesis or hemiplegia, has been interpreted from a static or strictly anatomical point of view. Mechanisms producing this very common disorder in its various forms have not been adequately understood until the rather recent contribution to our knowledge gained from an understanding of the hemodynamics as interpreted from experimental work and to an even greater extent from cerebral angiography. As a consequence we can now appreciate the fact that abnormality remote from the actual point of origin for neurologic manifestations may be significantly contributory. The purpose of this communication is to correlate the factors which we presently feel serve to explain subjective and objective evidence of vascular insufficiency to the cerebral structures. In addition, a rather simple clinical test which will aid in the establishment of a valid diagnosis or direct the planning of further diagnostic procedures will be described.

A great mass of medical literature is in existence bearing on the over-all problem of "stroke." No attempt will be made to recognize all of the significant contributions in the field or to consider all of the fine details of anatomical structure that are essential to a total understanding of the problem. In order to gain some element of perspective it is essential that a critical appraisal is made of the literature. For example many erroneous concepts have grown into our medical thinking from originally inadequate anatomical work, such as is exemplified by the work of Duret, 1872-1874[1], a student who did anatomical studies for Charcot. These misconceptions were magnified by the distorted illustrations of the "striate" arteries created by Charcot's artist. Many of these misleading representations still appear in neurological texts.

The more exacting work of Abbie (1934)[2] and others such as the recent studies of Kaplan et al.,[3] more specifically delineate the true nature of the anatomical distribution of the many small (ganglionic) branches of the anterior and middle cerebral arteries. In addition Dandy (1948)[4] consolidated a large series of reports on the congenital abnormalities which may be present in the Circle of Willis to provide us with a greater knowledge of the vagaries of this particular area of vascular flow. A combination of this knowledge with that gleaned from an evaluation of cerebral angiograms gives us a more realistic understanding of the mechanism of cerebral vascular insufficiency, their detection and the implications of potential therapy.

The Circle of Willis was designed to provide the maximum potential of collateral blood supply to all areas of the brain and the brain stem. In its completely normal state this is remarkably adequate, however, it has been found that some variation in the Circle may occur in as high as 50 per cent of all human beings. The abnormalities are most frequent in the posterior portion of the Circle, although many of the potentially symptomatic variations exist in relationship to the anterior portion of the Circle. Even when such variants may be existent no significant neurological aberration is apparent under terms of normal vascular patency and hydrodynamics. On the other hand ageing with its concomitant atherosclerosis or even the presence of mass lesion within the cranial cavity may produce a deficiency of flow which may readily affect some of the congenitally small segments and ischemia may result. Therefore, the pattern of neurologic deficits is determined to a great degree by the patency of the carotid and vertebral systems, the Circle of Willis and the available collateral circulation.

As a specific example of the influence of interruption of a collateral element on intra-arterial pressure is a patient on whom these pressures were recorded during surgery for aneurysm requiring ligation of the internal carotid artery. Manometric readings were made in the ipsolateral anterior cerebral artery demonstrating a fall in arterial tension to one-half the original level. Upon compression of the opposite carotid bulb the pressure dropped to zero. With permanent occlusion of this nature the flow from the vertebral artery would bring about compensation in a few seconds. At

---

*Presented before the sixty-eighth annual session of the Mid-South Postgraduate Medical Assembly, Memphis, Tennessee, February 12-15, 1957.

†Aided by Grant from the Kresge Foundation.

Departments of Radiology and Neurosurgery
Wayne State University - College of Medicine
Affiliated Hospitals
Detroit Memorial Hospital - The Grace Hospital

this point it would seem proper to introduce a clinically applicable test based on this phenomenon and proceed to an evaluation of the results obtained in 100 patients having hemiparesis or hemiplegia on whom this test was performed, and their vascular pattern defined. This is the digital artery compression test and has been used on several hundred patients without serious complications[5]. The test is carried out in the following manner. The patient is placed in an upright position in bed or upon an examining table and the carotid artery lightly palpated. Upon identification of the carotid bulb increasing pressure is slowly applied until the flow in both the internal and external carotid arteries is obstructed. An assistant carefully observes the pulse inasmuch as a hypersensitive carotid sinus reflex may produce a cardiac asystole and a resultant syncope within five seconds. (This type of response is infrequent). Syncope resulting from cerebral vascular insufficiency, to be considered in detail subsequently, develops after longer compression (10 to 40 seconds). Respiration usually becomes more rapid as the patient complains of dizziness, blurred vision and pallor also may be associated. Syncope, in association with chronic convulsive movements, slowing of the heart action, and sometimes a decrease in blood pressure may then result. Should there be a co-existence of a hypersensitive carotid sinus reflex and a vascular insufficiency, differentiation may be accomplished by utilization of an electrocardiogram made following the administration of atropine sulphate gr. 1/100 administered intravenously. At the first sign of syncope, compression should be immediately released and the patient placed in a recumbent position. It is noteworthy that the response to the first test is maximal and subsequent compression tests may require longer periods of pressure in order to produce syncope or it may not develop at all.

Our technique for carotid angiography is simple and does not involve elaborate equipment. The carotid artery is palpated and an 18-gauge needle inserted into the artery. Once it is established that free flow has been obtained, a 10 cc. syringe containing hypaque 50 per cent is attached to the needle by means of high-pressure rubber tubing and injection begun. Upon signal from the neurosurgeon, a radiographic exposure is made. A single Bucky film in the AP projection with candid angulation of the tube is obtained on the first injection. A second injection is utilized in obtaining the lateral film. Care must be taken in placing 10x12 cassette to include the common carotid bifurcation. A serial film device is not used (though available) for two reasons: 1) single film technique permits immediate processing and interpretation before the needle is withdrawn from the artery and the patient moved from the x-ray room; 2) radiation exposure to the neurosurgeon is kept at a minimum when limited numbers of films are taken. Repeat injection can be made when necessary.

Correlation of the response to the digital carotid artery compression test in the 100 patients having hemiparesis or hemiplegia indicates that the response varies depending upon the cause of the paresis or paralysis[6,7,8,9]. They are categorized as follows:

I. *Syncopal Responses*
A. Carotid Occlusion—29 cases
1. Complete Unilateral Occlusion — 17 cases
Syncope—13 cases
No syncope—4 cases
Note: 2 patients not showing syncope were of long standing
(7 months, 1½ years)
2. Incomplete Unilateral Occlusion — 12 cases
Syncope—11 cases
No syncope—1 case
Note: 1 patient not responding also long standing.
B. Basilar Artery Occlusion—7 cases
Syncope—6 cases
No syncope—1 case
Note: Syncopal response occurred either upon right or left carotid artery compression; exception was patient with 2-year partial occlusion.
C. Anterior Cerebral Artery Occlusion—10 cases
Syncope—9 cases
No syncope—1 case
II. *Non-Syncopal Responses*
A. Middle cerebral artery occlusion—10 cases
Syncope—3 cases
No syncope—7 cases
Note: One of the patients in the syncopal group has an associated occlusion of the anterior cerebral artery.
B. Small artery arteriosclerosis — or emboli with ischemia and infarction—10 cases.
(Normal Angiogram)
Syncope—None
No Syncope—10 cases
C. Mass Lesions (Brain tumor, hematoma—26 cases
Syncope—6 cases
No syncope—20 cases
Note: One patient responding by syncope pre-

sented a sensitive carotid sinus: 1-70 years of age; 2-with papilledema; 1-chronic subdurnal hematoma.

D. Encephalitis, meningitis, multiple sclerosis, trauma—8 cases

Syncope—None

No syncope—8 cases

III. *Summary of Response*:

1. Misleading responses occurred in 16 cases. In patients where syncope was expected (46) there were exceptions in 7. In patients where syncope was not expected (54) there were exceptions in 9.
2. Factors influencing the response include length of time of occlusion which influences collateral circulation, the presence of a sensitive carotid sinus reflex, increased intracranial pressure, or a partial carotid occlusion accompanying other lesions.

DISCUSSION

1. *Carotid Artery Occlusion*—A syncopal response occurs in the vast majority of cases upon digital compression over the opposite carotid bulb. Even though a neurological deficit exists the patient may maintain sufficient intracranial circulation as a result of collateral flow to supply the centers of consciousness. This total circulation is threshold in character, and compression over the uninvolved side produces sufficient depression in flow to produce a positive test. If the pathological situation has been existent for some period of time, compensation may be adequate to reflect in a negative response to the pressure test. If both right and left carotid arteries are in a state of insufficiency, compression over either artery will result in syncope. It is essential that the angiographic studies be carried out with adequate size films, and with proper positioning for visualization of the bifurcation of the common carotid artery. Fig. 1-a and b; 4a.

2. *Anterior Cerebral Artery Occlusion*—In this instance it was noted that syncope occurred in 9 out of 10 cases upon compression over the contralateral carotid bulb. This would indicate that under the circumstances of unembarrassed collateral supply the anterior communicating artery was adequate and the portion of the anterior cerebral above the communicating was patent. Blood flow from one anterior cerebral artery appears to be necessary to preserve consciousness because of its contribution to the total flow to the brain stem and hypothalamic centers. The pattern of neurologic deficits that occur when an anterior cerebral artery is occluded either proximal or distal to the anterior communicating artery is determined by the patency of the carotid and vertebral systems as well as the Circle of Willis. It is interesting to note that in the patients with anterior cerebral artery occlusion, psychosomatic symptoms in the nature of nervousness, generalized weakness and "faint-like" spells, were predominant findings. Fig 2a and 8.

3. *Basilar Artery Occlusion*—In the presence of insufficient flow in the basilar artery, visualization of this artery can be obtained from injection of the carotid indicating a very significant compensatory collateral supply. Without this compensation death would occur. Embarrassment to the collateral supply created by obstruction at the carotid bulb on either side increases the insufficiency to such a degree that syncope occurs. Fig 3a and 8.

4. *Middle Cerebral Artery Occlusion*—Two angiographic patterns may be present either representing obstruction of the primary segment of this artery or an apparently normal angiogram in association with small artery obstruction which results in ischemia or infarction. In the instance of primary segment obstruction, hemiplegia was found to be profound. The lack of syncopal response is preponderant and this lack of response suggests that the ganglionic branches of the middle cerebral artery may not be of particular significance in their supply of the conscious centers and that this latter role is more likely carried out by the branches of the anterior cerebral. Fig. 4a and b; 5 a and b.

5. *Mass Lesions*—These may consist of tumors, intracerebral or subdural hematoma. In an analysis of 50 "stroke" cases evaluated by a general practitioner, five (10%) were the result of mass lesions. Compression tests aided in the diagnosis of these patients. Syncope usually does not occur, however it may do so, especially in the presence of increased intracranial pressure. It would seem logical to assume that this pressure has produced at least a threshold embarrassment of vascular flow and that the added insufficiency caused by carotid bulb pressure is sufficient to further embarrass the supply to the conscious centers resulting in syncope. Fig. 6a and b; 7 a and b.

6. *Inflammatory, Degenerative, or Traumatic Abnormalities*

Without Mass Lesion.—Under these circumstances and in the absence of other vascular pathology it would not be anticipated that embarrassment to the vascular supply produced by carotid bulb pressure would be of sufficient degree to produce syncope and this is borne out in the fact that in the 8 cases evaluated none showed such a response.

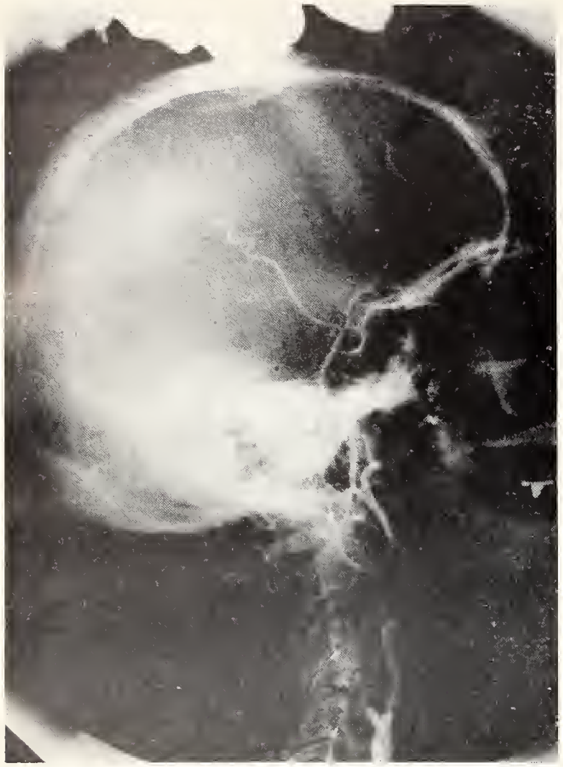
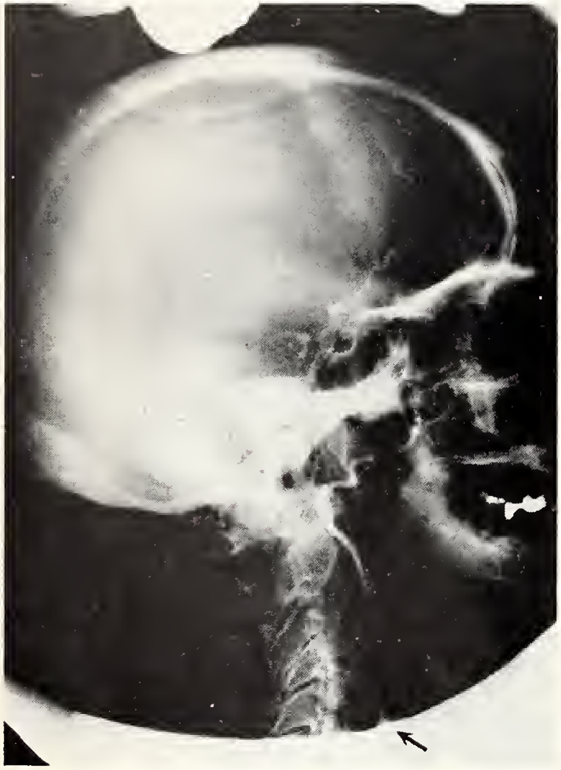


Fig. 1 a. 64-year-old w.m. Complete occlusion left internal carotid artery; branches of the external are visualized. Compression of opposite carotid bulb will usually produce syncope in recent occlusions.



Fib. 1 b. Same patient. Complete occlusion also of the right carotid artery. Branches of external are seen and also slight visualization of the basilar artery as a result of collateral flow below the level of the Circle of Willis. Sufficient to maintain life.

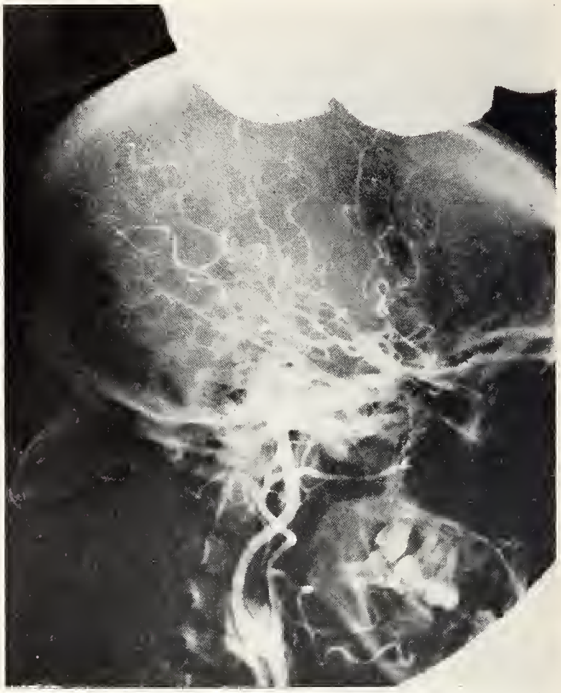


Fig. 2 a. 40-year-old c. f. Lateral view showing absence of anterior cerebral artery filling due to thrombosis. Good filling of middle and posterior cerebrals. Compression on contralateral carotid bulb produces syncope.

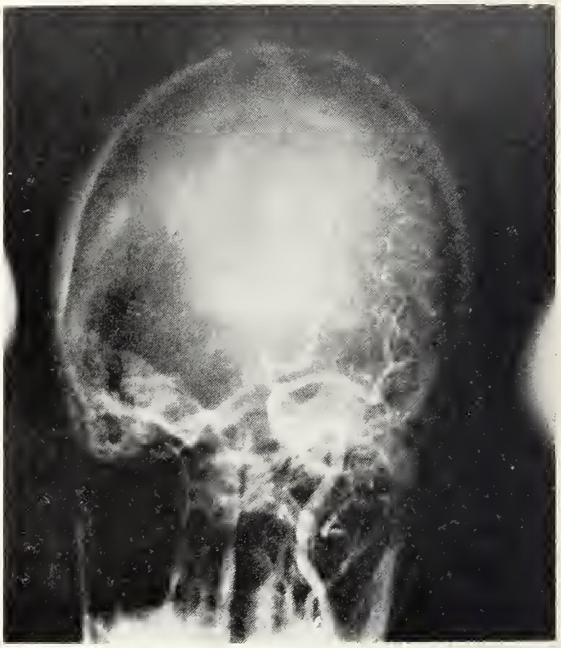


Fig. 2 b. Same patient. Showing good visualization of the middle and posterior cerebrals but absence of anterior cerebrals.

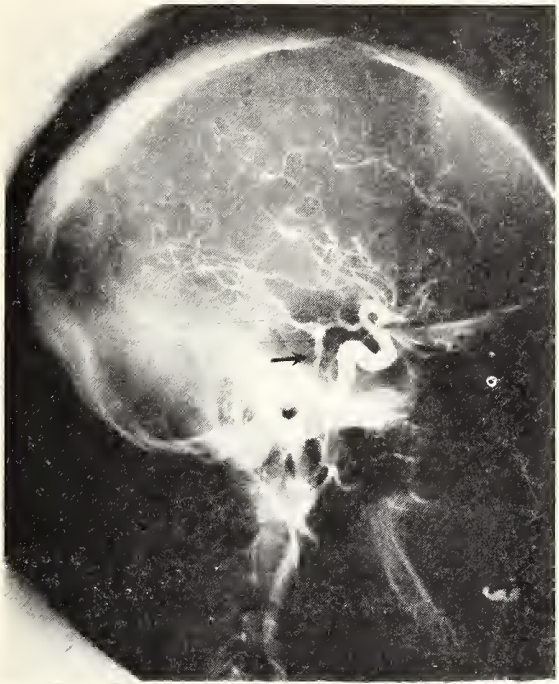


Fig. 3 a. 43-year-old w.m. Basilar artery insufficiency. Lack of pressure in the basilar due to atheromatous narrowing permits visualization upon injection of carotid artery with good collateral flow through the Circle. Anterior, middle and posterior cerebrals are seen. Compression on either right or left carotid bulb usually produces syncope in this type of occlusive lesion.

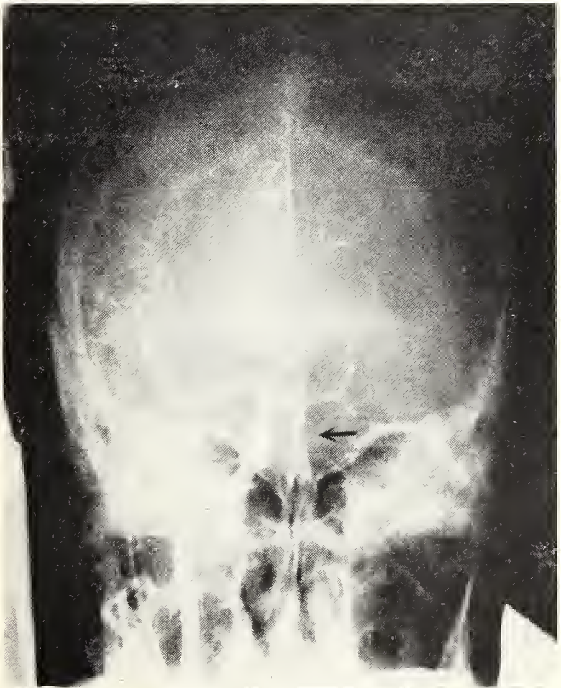


Fig. 3 b. Same patient. AP projection showing good filling of anterior, middle and posterior cerebrals with partial visualization of basilar artery and opposite posterior cerebral.

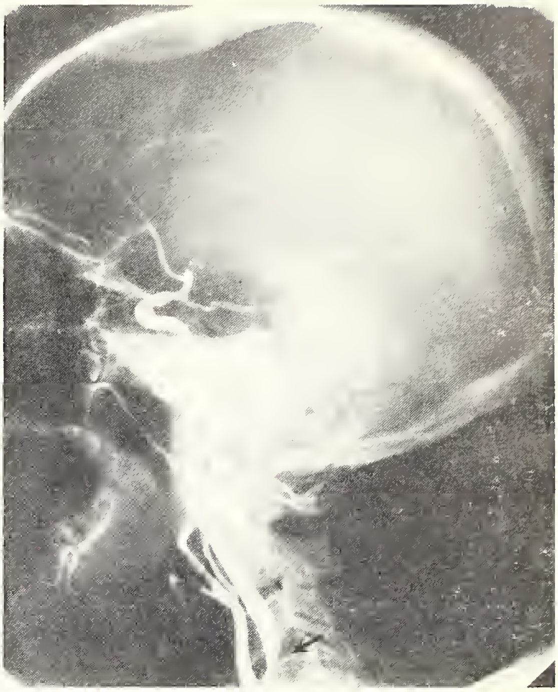


Fig. 4 a. 76-year-old w.m. Non-visualization of middle cerebral artery due to occlusion with partial visualization of anterior and posterior cerebrals. Note especially the partial occlusion of the first portion of the internal carotid.

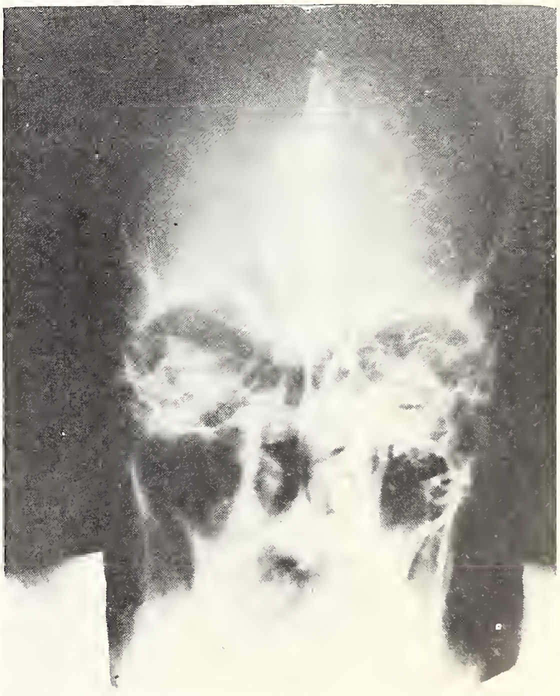


Fig. 4 b. Same patient. AP projection visualizes anterior and posterior cerebral vessels. Note displacement of anterior cerebral across the midline due to cerebral edema. Contralateral carotid bulb compression does not produce syncope in occlusions involving the trunk of the middle cerebral artery.

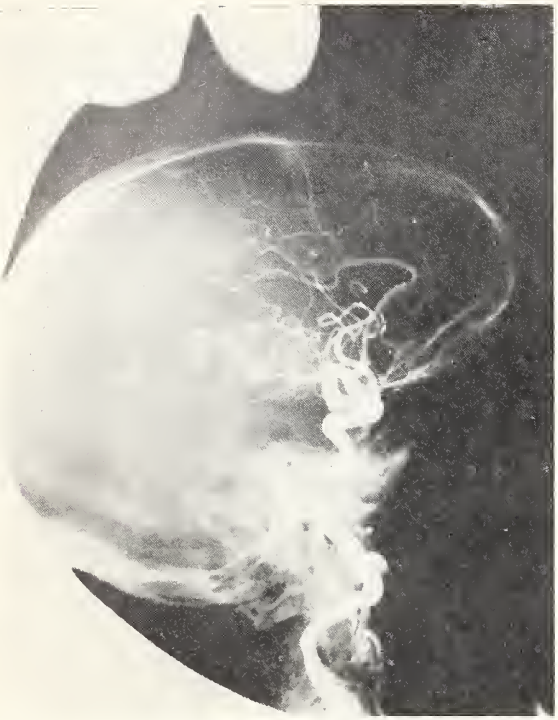


Fig. 5 a. 71-year-old w. f. Middle cerebral artery, small branch occlusion. Primary segments are filled. Essentially normal angiogram. No syncope on contralateral carotid bulb compression in this class of patients.

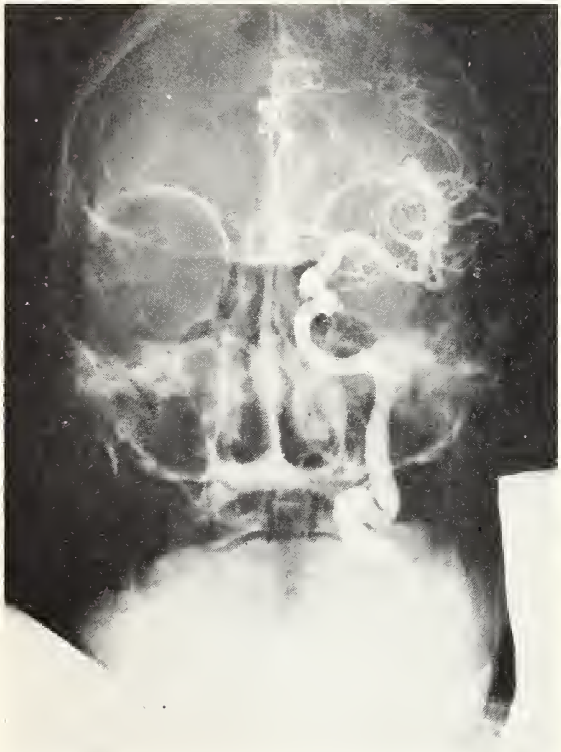


Fig. 5 b. Same patient. AP view showing good anterior and middle cerebral artery filling.

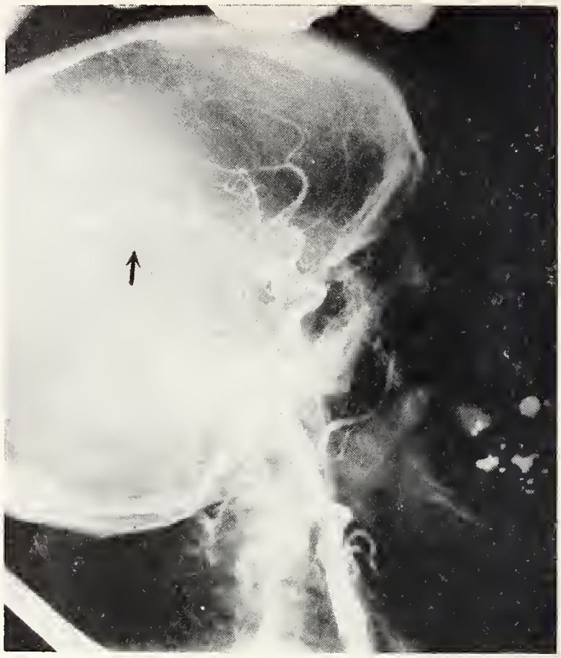


Fig. 6 a. 64-year-old w. f. Elevation of the middle cerebral artery groups due to mass lesion as a result of brain tumor. Contralateral carotid bulb compression usually does not produce syncope except occasionally in the presence of increased intracranial pressure.

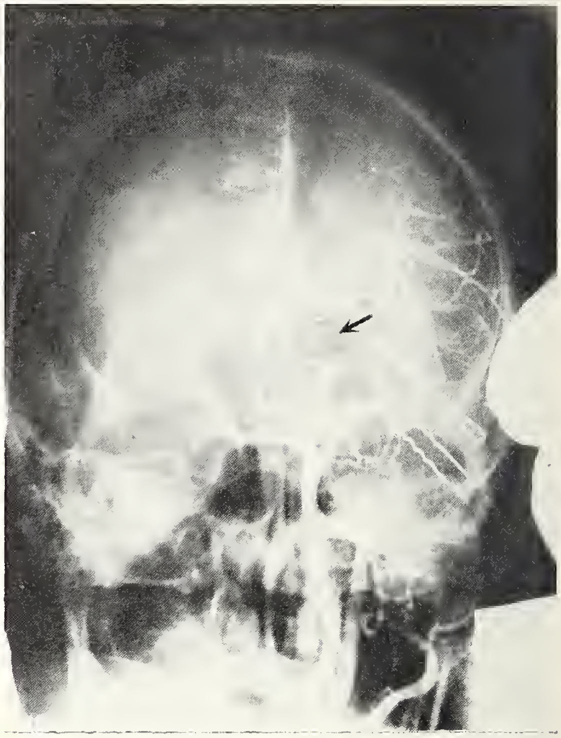


Fig. 6 b. Same patient. AP view. Note displacement of anterior and posterior cerebral groups medially and slightly across the midline as a result of the mass lesion. This patient had been diagnosed as a cerebrovascular problem before angiographic studies.

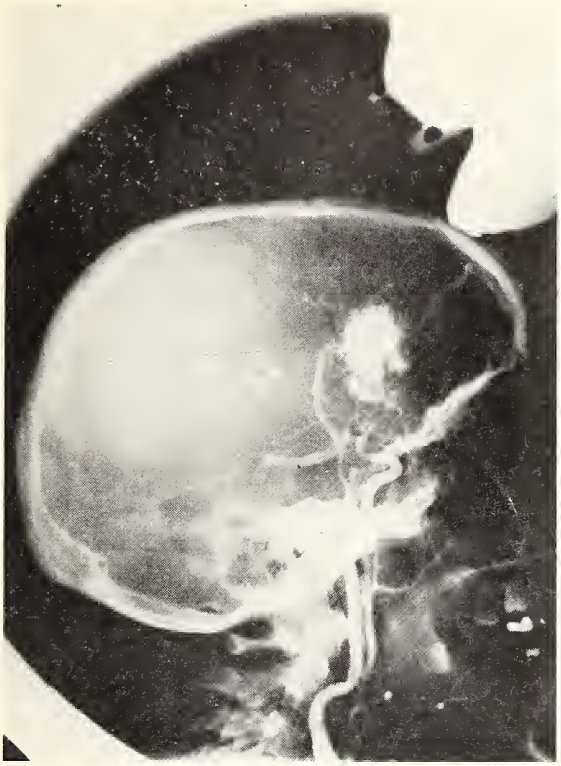


Fig. 7 a. 18-year-old w. f. Mass lesion as a result of arteriovenous abnormality showing large mass of small vessels and with large venous trunks leading from the plexus. Patient had a subarachnoid hemorrhage. No response upon carotid bulb compression.

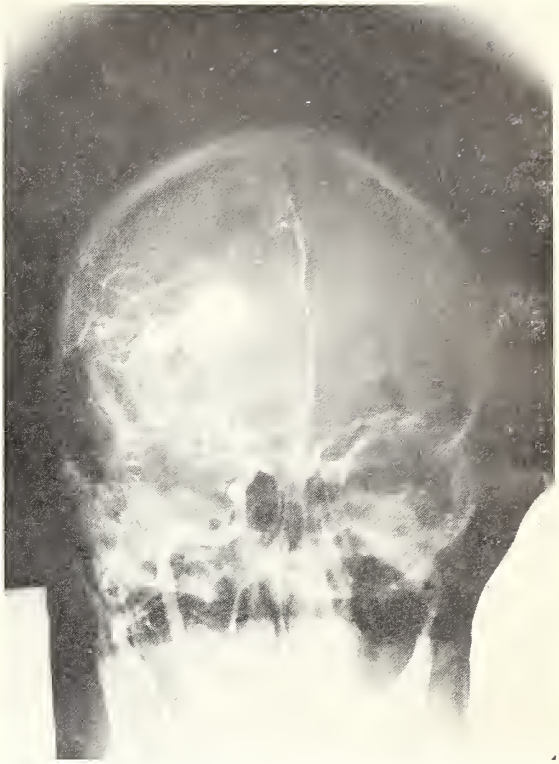


Fig. 7 b. Same patient. AP view. Vascular mass well visualized with slight displacement of anterior cerebral across the midline.

SUMMARY

1. Information obtained by carotid angiography may prove extremely valuable in the determination of the true cause of the "stroke" syndrome.

2. The carotid compression test used cautiously may be employed as an aid in diagnosis and in the determination of further studies to be carried out in the evaluation of the "stroke" patient.

3. Variations in response to the carotid pressure test have been indicated with misleading response occurring in 16 per cent of the cases.

4. The co-ordinated efforts of the generalist, neurosurgeon, radiologist, internist, and psychiatrist aid not only in the establishment of a proper diagnosis but also in the institution of preventative, remedial and rehabilitative procedures.

BIBLIOGRAPHY

1. Duret; Arch. de Physiol. 1873 and 1874.
2. Abbie, A. A.: The morphology of the forebrain arteries and especial reference to the evaluation of the basal ganglia. Journ. Anat., 68:28, 1934.
3. Kaplan, H. A., Rainer, A. M., and Browder, J.: Anâtomical study of the blood vessels of the brain. II. The perforating arteries of the base of the forebrain. American Neurological Association Meeting, 1953.
4. Dandy, W. E.: Intracranial Arterial Aneurysms. Comstock Publishing Co. 1947.
5. Gurdjian, E. S., Webster, J. E.: Mechanism of Syncope due to unilateral compression of carotid bifurcation. Arch. of Neurol. and Psych. Vol 75: 556-558, November 1955.
6. Gurdjian, E. S., Webster, J. E.: Carotid Artery Occlusion. Neurol. Vol. 6, No. 7, July, 1956.
7. Webster, J. E., Gurdjian, E. S.: Observations upon responses to digital carotid artery compression (in hemiplegic or hemiparetic patients). Arch. Neurol. and Psych. In press.
8. Webster, J. E., Gurdjian, E. S.: Observations upon digital carotid artery compression. (In patients with occlusions of the middle cerebral artery). Arch. Neurol. and Psych. In press.
9. Gurdjian, E. S., Webster, J. E.: Digital carotid artery compression in patients with occlusion of the anterior cerebral artery. Arch. Neurol. and Psych. In press.

Mississippi Medicine -- Century II*

H. C. Ricks, M. D.
Jackson, Miss.

For the next fourteen minutes, let us everyone assume that there isn't a doctor in the house.

Let's put aside the pomp and circumstance of this formal, scientific convocation of a professional society over one hundred years old. In fact, let's take off the rose-colored glasses which filter out the sights we don't want to see and take a good, honest look at two subjects close to home: personal health and our native resources with which to guard it.

"As God gives us the light to see . . ." is more than a phrase of acknowledgement and admission of limitation. It points up something practical, too. We see and understand things, images—yes, even ideas—only in terms of illumination. Nobody sees anything in absolute darkness.

So let's add another exciting condition to this examination we're about to make and be sure that we take a look under ideal conditions of lighting—objectivity, if you please.

Most of us are quick to agree that personal health is the most precious of life's earthly possessions. Without it, wealth, success, position, all lose meaning. That impartial common denominator, illness, divides to equalize all quantities in the human equation.

And the final quotient is zero—nothing—oblivion.

More than the good, modern medical care which is ours instantly, we so sorely need reassurance and solid advice in fundamentals of personal health. This year of grace, 1957, is one of our being frightened to death before the spectres of disease and pestilence with which we are threatened could possibly come to claim us as victims.

Take an average evening of television, at best a questionable pursuit of relaxation and diversion. During the dinner hour, the newest "adult" western drama offers death by snakebite, maiming by wild horses, and six deceases by gunshot.

Next comes the highpowered national network newscast, duly aiding stock market, and the announcement that an epidemic of whatsis has apparently broken out in Walla Walla. We then progress to the quiz show during which $100,000 is given to some unlikely genius after which the announcer reminds us that we have "tired blood."

Comes then the science-fiction thriller portraying the tortuous end of Denver's population from radioactive fallout, and next the public service program kicking off the fund drive for the National Foundation for Low Back Pain. Naturally, this is the nation's number one health problem. By this time, you retire wondering if beneficent Providence will see you through to another dawn.

Admittedly, this is a facetious exaggeration of personal health worry compounded upon us daily over and above our own foibles and idiosyncrasies, the old wives' tales we want to believe, and the fears that pressure living inexorably places upon us. Little wonder then that we think of anything but curative medicine, looking for and demanding medical miracles not for use but reassurance.

Take the Salk polio vaccine as a case in point. How many of you must breathe sighs of relief when, after two years, we now know that the vaccine is both safe and effective.

But how many persons here tonight have actually received the vaccine? That's another story, isn't it?

Implicit in this trend of thinking is the kind of reassurance we need and, more than that, the practical course open to us in the realization that medicine is on guard for our health.

We hear, read, and see a good deal of medical progress. Every medium of mass communication is telling medicine's story. So great is the impact of the miraculous that the practical is all but lost in the shuffle. It's far more important, as a practical, down-to-earth matter, that your family physician treats and cures a red throat in two office visits where the same disorder might have meant death by infection twenty years ago than the fact that vascular surgeons can transplant arteries. The miraculous is vital but the practical is utterly essential.

The news story of a great 2,000-bed hospital with its imposing array of diagnostie and laboratory facilities away in a northern metropolitan area is actually less important to you than the new community hospital—neat, efficient, and modern-giving your hometown fifty beds and your five local physicians a place to work for the preservation of your personal health. Why, since 1946, almost eighty new community hospital projects have been completed in Mississippi and it's hardly possible to find yourself more than twenty to thirty minutes from the best of hospital facilities in this state by paved highway!

---

*Annual Address of th President, H. C. Ricks, M.D., May 14, 1957.

*The Annual Address presented by the president of the Mississippi State Medical Association, May, 1957.

In the final analysis, the story of medicine and medical miracles is just the story of your hometown family physician. Medical organization—this state medical association, the great American Medical Association—they're nothing but your personal physician multiplied by six-digits. Their strength, authority, and effectiveness are just a compounding of the local doctor's abilities and dues dollar.

Yes, it's your doctor and my doctor and all the doctors in county medical societies, state associations, and the AMA who are American medicine. They work in research, patient care, preventive medicine which we call public health . . . they teach, demonstrate, write, study . . . working without ceasing.

Your doctor realizes that the era of the individual has given over to that of the team. Some of us remember the dignified, imposing figure—the local doctor of many, many years ago. He had the best cut frock-tail coat, the best groomed mare, and the newest buggy in town. He was characterized by wisdom, gentleness, patience, and dignity. He deserved every tribute paid him but the fact remains that his therapeutic tools were limited, he generally nursed—not doctored—people back to health, and life expectancy was less than fifty years!

The transition from this revered stereotype of early Americana to this dynamic era of modern medicine was confusing and at times, uncertain. But order came from chaos. Medical education became standardized and uniformly high. The diploma mills of the early 1900's went the way of all fraud and flesh, proclaiming the advent of the modern medical center of learning and research.

The doctor changed, too. He found at his disposal new knowledge and a vast selection of potent, lifegiving chemical tools—modern drugs. New technics in surgery, medicine, therapeutics—all combined to make him a vastly different person in terms of what he could do in time of health crisis.

But the character of the physician hasn't changed. The thoroughly trained, efficient doctor of 1957 carries in his heart the same dedication as the ill-equipped but dignified and dedicated physician of 1900. Through medical organization, postgraduate study, research, socioeconomic programs designed to make more care available to more people are bigger, better, and more effective today than ever before.

When you're next in Jackson, go by 735 Riverside Drive and see Mississippi medicine's home, a new and modern office building. It was put there just a year ago as our organization headquarters on this association's one hundredth birthday to serve you, the people of Mississippi. Dr. Lamar Bailey summed it up at the dedication ceremony when he said of the building that ". . . it is not a monument of brick and mortar, steel and concrete, wood and fabric but a beacon—saying this is medicine in Mississippi, serving you."

The Mississippi State Medical Association is your service institution. By serving doctors who own, finance, and make its policies, it serves you. Yet, MSMA is but a part of a vast structure of organization carrying forward this dedication of service. And the proof of the pudding is in the eating thereof: More people have more and better medical care in this nation than anywhere else in the world—all under a system of free enterprise and free choice, the way it must remain if the situation is to be thus!

This is the 101st year of our association, having been founded in 1856. This, then, is the beginning of our second century of service.

Mississippi physicians—those selected into our ranks of membership—are forwardlooking men and women, courageously and realistically moving into a certain future. Like an invisible protective, friendly umbrella, medicine and its disciples, the doctors, are there when you need them. Of equal importance, they are studying and working with the hope and promise that you won't need them.

With a steady eye on the future, Mississippi physicians and their state medical association are serving in many areas. Far beyond simply being there when you call, they are devoting themselves to a great program of caring for the indigent without desire or request for compensation. They are working for practical, just, and equitable laws designed to benefit and protect your personal health. They are conducting study and research beyond the laboratory in the offices of our organization, determining how a good system of well-distributed medical care can be made better.

Through all these dedicated endeavors, your Mississippi State Medical Association is trying to square the common denominator of illness and to make the quotient smaller and smaller through programs of service.

Let's put aside our initial suppositions for the look in which we indulged ourselves. Those friends of medicine who honor us with their presence upon this occasion realize that the doctor at their side—possibly a perfect stranger—is really a neighbor. Realization of his objectives and his professional aims brings closer to home his daily effort to improve on Pasteur's famed dedication when he pledged ". . . to cure some, to aid many, to comfort all."

Take reassurance of medicine's dedication of service and put out fears in terms of seeking vigorous, forceful use of life.

For ". . . as God gives us the light to see," we will prosper and account well for ourselves—all of us—in service one to another.

ANNUAL ORATION : DR. J. RICE WILLIAMS

M. Q. Ewing, M. D.
Amory, Miss.

Dr. Joshua Rice Williams was born at Redland, Pontotoc County, August 3, 1867, and died Thanksgiving night, November 26, 1953, in the Houston Hospital, Houston, Mississippi, at the age of eighty-six. Funeral services were conducted on November 28 at the Houston Presbyterian Church and a Masonic burial was conducted at the Houston Cemetery by the grand officers of the Grand Lodge of Mississippi Masons.

Dr. Williams, who never signed his first name but always signed his name J. Rice Williams, was the fifth child of nine children of Oliver and Regina Cockrell Williams and grandson of Thomas H. Williams, one-time U. S. Senator from Mississippi. His father was a farmer but not a prosperous one and while he aided Dr. Williams in obtaining an education, most of his education was obtained through the labor and efforts of Dr. Williams himself.

Dr. Williams received his primary and secondary education in the public schools of Pontotoc County and Houlka, and then for several years he taught in the schools of Pontotoc and Chickasaw counties and also farmed. He meanwhile did not abandon his ambition for further education and continued to study at home.

He was greatly influenced at this stage of his life by his contact with a Professor Smith (whose first name I am unable to learn). Professor Smith who was a university graduate with an M.A. degree was teaching in Pontotoc County. For several years he tutored Dr. Williams in Latin, Greek, English, mathematics and philosophy, and those of you who have had occasion to talk with Dr. Williams know well his broad culture and knowledge in these fields. Professor Smith wrought well on good material and all of his influence was excellent. I feel that I would have enjoyed knowing Professor Smith.

Dr. Williams for a time had ambitions to become a lawyer but later decided that medicine offered a greater opportunity to serve his fellowman. He entered medical school of the University of Tennessee in 1892 at the age of twenty-five and although he had no college training he was actually far better educated than most university graduates of the period. He was graduated with an M.D. degree in 1894 and was president of his class in his senior year.

Dr. Williams began practice of medicine in Houlka in 1894 but after a short time he felt the need for further training in medicine and entered the University of Nashville where he completed a year of postgraduate training, returning to Houlka in 1896. He moved to Van Vleet in 1898 and Houston in 1904 where he practiced until his death.

Dr. Williams married Miss Nona Hobson in 1896 and there were two children, a son, Felix T. Williams of Memphis, and a daughter, Mrs. Powell Goodwin of Philadelphia, Miss., both of whom survive him. Dr. Williams' wife died in 1910 and he remained a widower until his marriage to Miss Florence Ford, April 25, 1929, who survives him.

Dr. Williams continued an active general practice in Houston until at the age of 55. When many men are making plans for retirement he entered upon study of a medical specialty comparatively young in medicine at that time, namely radiography and roentgen therapy. He studied this specialty in clinics in Memphis, St. Louis, Chicago, New Orleans and Battle Creek, returning to Houston in late 1923 and confining his work to radiography and roentgen therapy in the Houston Hospital from that date until his final illness.

To a man of the high calibre and attainments of Dr. Williams whose life covered so broad a span there naturally came numerous deserved honors and responsibilities and labors that were oftentimes arduous and onerous, but these duties and responsibilities were cheerfully and faithfully assumed, and they covered multiple fields. Even to list them is lengthy.

As a citizen he was always a leader in every project for civic improvement. He was president of the board of trustees of the Houston schools for many years; a member of the chamber of commerce; past president of the Exchange Club; chairman of the commission which built the first hard-surfaced roads around Houston. He installed the telephone system in Houston which he later sold to the Cumberland Telephone Company.

He was always active in religious affairs and was at various times teacher of the Bible class, superintendent of the Sunday school and ruling elder in the Houston Presbyterian Church.

As a physician he was beloved in his community, successful not only because of his ability but because he had a lovable personality, a keen wit, a sense of humor, and a basic wisdom and stability that people so inherently sensed that they came to rely upon him for advice in matters other than professional.

Dr. Williams was Chickasaw County health officer for many years; a member of the First State Hospital Commission for Charity Hospitals; a member of the board of trustees of the Hospital for the Insane; a member of the State Advisory Board for Selective Service in World War II; past president of Chickasaw County and Northeast Mississippi Medical Societies; speaker of the House of Delegates of the Mississippi State Medical Association from 1938 to 1948; and when illness interfered with his ability to speak distinctly he was by unanimous vote of the House of Delegates retained as speaker emeritus from 1948 until his death.

As a Mason Dr. Williams was far more widely known than in any other field. He has held every office that Mississippi Masonry can bestow upon her worthiest sons. He was presiding officer of all the local Masonic bodies. He was grand master of the Grand Lodge of Mississippi, grand master of Royal Arch Masons and for 38 years was grand lecturer of the Grand Lodge of Mississippi. He was the author of the Masonic *Digest of Laws for Mississippi Masons*. He was the greatest teacher Mississippi Masonry has ever had.

Thus far I have just briefly recounted the life and a brief résume of the acts of a many-sided man but it is dry, as such obituaries are. The man himself was not a dry character. He was human, witty, with a contagious sense of humor, friendly, a sympathetic friend, a wise adviser, a wholesome philosopher, a dedicated teacher. He was ruggedly honest, and uncompromising in the ethical field, but never pugnacious and always had a judicial ability to see both sides of a question. He was always known as the "Peace Maker" because of his ability in a friendly way to smooth oil over troubled waters.

Dr. Williams was a born diplomat and his studies and training enhanced his ability to iron out difficulties in our medical society many times. As Speaker of the House of Delegates he was a master both of parliamentary procedure and skill in handling and preventing conflict.

Dr. Williams had a remarkable ability to inspire confidence and his advice was valued and often called upon. I have often profited by his advice, never given in a pompous manner and usually with some witty asides interspersed. No Mississippi doctor has ever been more revered by the profession.

Dr. Williams was a born teacher. He began teaching when he taught school as a youngster in Pontotoc County. As he developed he became a philosopher and for the rest of his life the teaching of morals and ethics became his interest and hobby. For thirty-eight years he was the Grand Lecturer of the Grand Lodge of Mississippi and there is no mason in Mississippi who does not honor and revere the memory of J. Rice Williams.

What constitutes a great man? It is his impact and influence on those that came in contact with him. The influence of J. Rice Williams was profound and wide-spread although it was not the kind published in newspapers, and it was always a good influence. When one casts a stone in a large pool and the ripples spread, who can tell how far they will spread? J. Rice Williams, not only lectured on morals and ethics but he also was a prolific writer and his influence wide ripples spread widely. In 1943 I attended Masonic Lodge in Sidney, Australia, and was surprised to find that in that lodge after Douglas McArthur and Franklin Roosevelt, J. Rice Williams was one of the best known Americans. Through what spread of the ripple from his lectures and writings this occurred, I do not know, but I do know that these Australians respected and honored J. Rice Williams, as I do.

I knew and honored and loved J. Rice Williams for 32 years and feel that he has the respect and reverence of all Mississippi doctors who knew him. To really know him was to love him.

There are and probably will be no monuments of stone and bronze erected to the memory of this man. Shakespeare has Marc Anthony in his funeral oration for Caesar, say, "The evil men do lives after them. The good is often buried with their bones." This is not true of J. Rice Williams. He was a teacher of morals and ethics for forty years. His influence on men was widespread and profound. It was all good and it did not die with him, and it was good enough to spread widely outside his native state. It still lives on and will continue to live on in honesty, morality, and integrity of a host of Mississippi men and women. It constitutes an undying memorial to a wise and humble and great man.

I close by quoting a tribute to J. Rice Williams as a Mason by Tom Q. Ellis, a life-long masonic friend of Dr. Williams.

"Every day Life is the test of true Masonic worth. A Frenchman brought his new form of religion to Talleyrand and asked, "Why is it that my religion is not more popular than the Christian religion which I am attempting to supplant? It is a much easier religion to practice than is the Christian religion." To which Talleyrand replied, "Go out and live by your religion, day by day, then die by it and on the third day arise from the dead and confirm humanity's hope in Immortality." Dr. J. Rice Williams knew, not only how to preach Masonry, but how to live it, and did both. What greater tribute could be paid to any man?

INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW

JOSEPH P. MELVIN, Jr., M.D.	Cardiology
HARVEY F. GARRISON, Sr., M.D.	Pediatrics
JAMES D. HARDY, M.D., and STAFF, Department of Surgery, University Medical Center	Surgery

CARDIOLOGY

Ventricular Arrhythmias After Intravenous Sodium Lactate in Heart Block

by John F. Murray and S. H. Boyer

by Samuel Bellet and Fred Wasserman

Indications and Contraindications for the Use of Molar Sodium Lactate

(*Circulation*—Volume 15, No. 4, April, 1957)

The publication of two papers in the same issue of *Circulation* points up the necessity for critical reading. The first paper by Murray and Boyer reviews previous papers by Bellet in which molar sodium lactate has been described as a safe and effective agent in the treatment of bradycardia and syncope accompanying complete heart block. In Murray and Boyer's series, however, in 12 patients with heart block, hypertonic lactate infusions produced ventricular tachycardia in six cases and an increased ideoventricular rate in only four. Isuprel was more effective and without such hazard in their opinion. The effect of alkalosis from molar lactate, 5 percent sodium bicarbonate and hyperventilation are compared, and of the three, lactate was productive of the most pronounced and longest action regarding ventricular acceleration.

In the same journal of *Circulation*, Bellet and Wasserman extend their experiences with molar sodium lactate to include a total of 101 patients. In this paper they review certain indications and contraindications to its use, and stated that these parameters of its use have more or less been formalized since their earliest publication. They stated that the administration of this agent is shown to be a physiologic and effective method of treating patients with severe hyperpotassemia, multiple Stokes-Adams attacks, and cardiac arrest, particularly that occurring in the operating room, complicating cardiac surgery. For many patients in these categories, sodium lactate was life saving, even though it was generally given after other more commonly used drugs, such as Isuprel, had proved ineffective in restoring cardiac rhythm. In the total group of patients untoward effects were few.

There would seem to be a tremendous disagreement between these two papers as to the efficiency and safety in the use of intravenous and oral molar sodium lactate in the treatment of cardiac arrest, AV heart block with Stokes-Adams attacks, sinus bradycardia, and other manifestations of diminished cardiac output secondary to bradycardia. However, this disagreement can quickly be resolved by noting Bellet's observations in his summary, in which it is stated that the presence of extrasystoles in the control electrocardiogram tracing either contraindicates the use of sodium lactate or makes it mandatory that it be given with extreme caution under constant electrocardiographic control. An increase in preexisting extrasystoles, short paroxysms of ventricular tachycardia, and the development of new extrasystoles have been observed when this warning has been ignored. Congestive heart failure may also develop as another untoward effect of sodium lactate therapy. Then, in returning to the paper by Murray and Boyer, one sees immediately by review of the electrocardiograms presented before and after therapy, that almost every case they presented was characterized by ventricular extrasystoles in their cases of AV heart block with Stokes-Adams attacks. This is true of their Case 1, Case 2, Case 4, Case 6, Case 7, Case 8, and Case 12. No mention is made in Case 10 or 11 as to whether ectopics are present in the pretreatment cases of AV heart block with Stokes-Adams attacks and no electrocardiograms are presented with these cases. Thus, their (Murray and Boyer) conclusions that sodium lactate may cause undesirable ventricular ectopic activity, ranging from frequency of ectopic beats to paroxysmal ventricular tachycardia, is certainly true but has been proved in the very group of patients in which Bellet has recommended against using sodium lactate.

Murray and Boyer state that there was a relationship between the amount of sodium lactate given and the rate of the infusion to the development of ventricular arrhythmias. They mention that Bellet has recommended that 20 to 80 cc. of molar sodium lactate be given in ½ to 2 minutes to patients having Stokes-Adams attacks, and in the same breath state that five of their patients were given lactate in excess of these recommendations. Thus, not only is an unsatisfactory group of patients presented in which sodium lactate is used, but the directions as to its usage has been somewhat ignored.

Another contraindication as proposed by Bellet to the use of molar sodium lactate is the presence of severe heart damage, particularly in association with overt or impending congestive heart failure. In Murray and Boyer's series, Case 2 was admitted to the hospital in a semi-stuporous condition and congestive heart failure, Case 4 entered the hospital with congestive heart failure, Case 6 entered the hospital with mild congestive heart failure. These cases, of course, developed signs of ventricular irritability following the use of molar sodium lactate and one of these cases developed true attacks of ventricular tachycardia. Again, a known contraindication was ignored in Murray and Boyer's series of patients. And finally, Bellet specifically stated that he does not recommend molar sodium lactate for routine use in these cases of asymptomatic complete heart block without Stokes-Adams attacks. Case 4 of Murray and Boyer's series was a case of complete AV heart block, not productive of syncope, and yet this patient was treated with molar sodium lactate with the production of frequent ectopic beats and the appearance of substernal pain. Case 5 of Murray and Boyer's was admitted with chest pain and breathlessness of five days duration but with no attacks of syncope in the past, and again was placed on molar sodium lactate without good cause, with a consequent production of an attack of ventricular tachycardia. This was also true of Case 6, but in this case no effects at all were noticed after the use of molar sodium lactate.

In summary, it appears that molar sodium lactate is good therapy in the treatment of syncopal attacks secondary to extremely marked sinus bradycardia, AV heart block with a slowing of ventricular rhythm, or cardiac arrest. It should not be used in the above absolute and relative contraindicated cases, and its exact mode of administration should be learned thoroughly. Of course, being a ventricular excitant, it has its dangers, but when one is dealing with true Stokes-Adams attacks and the possibility of death during one of these attacks, molar sodium lactate appears to offer a rational and relatively safe mode of therapy.

PEDIATRICS

THE PROBLEM OF KEEPING PREMATURE INFANTS WARM OR COLD. W. H. Kintzel. Arch. Kinderh. 154:238-247 (No. 3) 1957 (In German) (Stuttgart, Germany).

Cooling has been regarded as a factor in the mortality of premature infants. It has been demonstrated in several statistical reports that the death rate is much higher in premature infants whose body temperature is below normal than in those in whom it is normal at the time they are admitted to the hospital. At the author's hospital the comparative rates were 47 and 18%. The higher mortality of those with low temperature is evident even if premature infants with intracranial hemorrhages and with other organic lesions are excluded. Whereas it was long accepted that the premature infants should be warmed up to 37°C (98.6°F) as soon as possible, it has recently been questioned whether this produced the best results. Joppich, for instance, advised that these infants be left to depend on their own heat regulating mechanism and that external heat (hot water bag) should be applied only if the body temperature fell to below 32°C (89.6°F). Tobler also reported favorable results with very gradual warming. Other investigators advocated not only that the body temperature of the infants not be increased, but that cooling be deliberately induced in the hope of reducing the high mortality.

In order to obtain more definite information on the advisability of hypothermia in the prematurely born, the author studied premature infants who were kept at temperatures at which they were born rather than warmed rapidly. It is pointed out that the problem in adults is different from that in premature infants because of the functional inefficiency of their heat regulating center. The author advises keeping premature infants weighing under 2,000 Gm. (4 lb. 6 oz.) at a low temperature if they are admitted with a low temperature, but this treatment seems to be of little advantage in premature infants of higher weight. The author does not favor inducing low temperatures, even under careful supervision.

COMMENT

This is quite an interesting article. It would seem that anyone who had practiced pediatrics for any length of time and had the privilege of seeing a number of premature infants would be expected to carry out the proper precautions to give such babies the necessary treatment. There is a practice in some hospitals of leaving normal babies as well as premature infants in the delivery room where the temperature is exceedingly low for quite some time after delivery. This we would advise strongly against. Certainly premature infants should be taken as quickly as possible to the nursery and placed in an incubator with the proper heating and other facilities but, not overheated. Temperature should be kept up to normal for a newborn premature, or about 98.6°.

The President's Column

THIS YEAR the editor of the *Mississippi Doctor* has generously offered me the use of a page in the Journal to communicate thoughts, happenings, and policies of the Association to the membership, for which I am grateful.

I am fully aware of the extensive duties, obligations, and responsibilities of the office of the presidency. It will be my purpose to carry out the policies set forth by our House of Delegates and Council. I am prepared to devote myself unstintingly to the discharge of these in the interest of our association, your several individual interests, and in behalf of the people of Mississippi.

Without your active assistance, support, and counsel, I shall be completely ineffective. I shall call on many, if not most, of you from time to time for we shall need one another as we move ahead. I shall hope for your comments and suggestions and will endeavor most diligently to be alert and responsive to your individual and collective wishes and needs. I fervently pray for Divine guidance in the role of service I have assumed with the earnest desire to serve you well and to further the work of my predecessors.

Our Jackson meeting is now less than a year away. In order to measure up to standards previously set by our associates it will be necessary that the sections chairmen start planning their work at an early date. The following have been designated as chairmen for 1958.

Surgery — Dr. Jim Hardy, Jackson
Pediatrics — Dr. Lacy G. Horn, Jr., Vicksburg
Obstetrics and Gynecology — Dr. Walter H. Simmons, Jackson
Preventive Medicine — Dr. Durward Blakey, Jackson
E. E. N. T. — Dr. Cameron Montgomery, Greenville
Medicine — Dr. Ira B. Bright, Greenwood

Howard A. Nelson, M.D.

A lighthouse sounds no drums, but far out over
the water its friendly spark is seen.
—WHITAKER

MISSISSIPPI ACADEMY OF GENERAL PRACTICE

M.S.M.A. ELECTIONS

Academy member Guy. T. Vise of Meridian was chosen president-elect of M.S.M.A. at its meeting in Biloxi last month. Other Academy members elected to office in the State Association are: Dr. W. H. Anderson, Booneville, editor, and Dr. Louis F. Rittelmeyer, Jackson, associate editor of *Mississippi Doctor*; Dr. C. P. Crenshaw of Collins and Dr. C. D. Taylor of Pass Christian, councilors; Dr. J. P. Culpepper of Hattiesburg, delegate to A.M.A.; Dr. Wm. E. Lotterhos, Jackson, Legislative and Public Policy Committee; Dr. S. Lamar Bailey of Kosciusko, Medical Service Committee; Dr. N. C. House of Batesville, Dr. George Townsend of Forest, and Dr. Eldon Bolton of Biloxi, Board of Health; Dr. William H. Brandon, Clarksdale, director of Blue Cross - Blue Shield.

M.A.G.P. LUNCHEON

Forty-four members and guests attended the Mississippi Academy luncheon held in Biloxi during the M.S.M.A. meeting. The guest speaker was Dr. M. C. Wiginton of Hammond, Louisiana, a director of A.A.G.P. He gave an informative talk on the history of A.A.G.P. Several prospective members were present, and distinguished guests included Dr. George Lull, secretary of the American Medical Association, Dr. D. S. Pankratz, director and dean of the University of Mississippi Medical Center, Dr. H. C. Ricks, Sr., outgoing president of M.S.M.A., and Dr. Howard Nelson, incoming president of M.S.M.A.

NEWS BITS

Dr. and Mrs. S. S. Kety of Picayune are enjoying a six-week tour of Europe.

Dr. Robert J. Moorhead of Yazoo City attended a meeting marking the installation of a chapter of Alpha Omega Alpha (honorary medical fraternity) at the University of Mississippi School of Medicine. Addresses were given by Drs. Walter Biering, J. J. Moore and Victor Johnson, officers of A.O.A.

BETHANY WINS AWARD

Dr. Joe J. Bethany, Jr., general practice resident at the University hospital in Jackson, was one of 10 recipients of a Mead Johnson Award for resident training. He will receive $1,000.00 and a certificate to be presented during the annual assembly in Jackson next September.

Mead Johnson and Company has added $10,000 to its original grant to enable the Academy to study means of improving and promoting general practice residencies.

Interns and members of the Armed Forces are eligible for these awards, given annually to ten physicians who intend to enter approved residencies.

Dr. Harry Frye of Magnolia is chairman of the Mead Johnson Scholarship Award Committee in Mississippi. Inquiries regarding applications for this award should be addressed to him.

A DEFINITION

Ever since the Academy first "defined" general practice few have been satisfied with the definition. Now we have a new one, officially adopted by the A.A.G.P. last March.

"General Practice is that area of medical care performed by a doctor of medicine in those fields of diagnosis and therapy commensurate with his professional competence, assuming a total continuing responsibility in the health of the individual or the family as a unit."

A man's example, exhibited as the years march on, contributes all of the best of his vision, his strength, his kindliness, and his Christianity.

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $3.00.

Published monthly at 104 Hospitality Street, Booneville, Mississippi. Return postage guaranteed.

W. H. ANDERSON, M.D. .... Editor-in-Chief
MILDRED P. ANDERSON .... Assistant Editor

MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY

C. W. Patterson, M.D. .... President
Rosedale, Miss.
J. Max Ray, M.D. .... President-elect
Forrest City, Ark.
C. L. Chumley, M.D. .... Vice-President
Nashville, Tenn.
Lon E. Reed, M.D. .... Vice-President
Hot Springs, Ark.
R. B. Cunningham, M.D. .... Vice-President
Booneville, Miss.
Thurman Crawford, M.D. .... Secretary-Treasurer
Memphis, Tenn.

Mid-South Associate Editors

H. King Wade, M.D. .... Hot Springs, Ark.
Frank M. Acree, M.D. .... Greenville, Miss.
R. L. Sanders, M.D. .... Memphis, Tenn.

MISSISSIPPI STATE MEDICAL ASSOCIATION

Howard A. Nelson, M.D. .... Greenwood
President
Guy T. Vise, M.D. .... Meridian
President-elect
Geo. W. Twente, M.D. .... Jackson
Secretary
Rowland B. Kennedy .... Jackson
Executive Secretary

State Associate Editors

Louis F. Rittelmeyer, M.D. .... Meridian, Miss.
John T. Bryan, M.D. .... Meridian, Miss.

The Publication Committee is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.

Address all material for publication to W. H. Anderson, M.D., 104 Hospitality Street, Booneville, Mississippi.

§

FIRST CLASS GRADUATES

For a half century Mississippi operated a fine two-year medical school. This two-year school was favorably known throughout the nation. Our students have made good all along the line. Now on June 16, 1957, we graduate our first class of full-fledged doctors. This is a happy day for the medical profession and for the people of our state.

DR. DAVIS WINS FIRST PLACE

Scientific exhibits came into prominence more than usual at the Biloxi meeting. Dr. J. T. Davis of Corinth won first place for his work on surgery of the hand. We offer our cordial congratulations to him for winning this prize. Surgery of the hand has been a neglected field generally speaking. But with the great number of accidental injuries this specialty is very important. It is a challenge to the best efforts and the best talents of any surgeon.

NIGHT CALLS STILL A MUST

According to Dr. Dwight H. Murray, president of the American Medical Association, there is still a need for house calls on the part of the medical profession. His eloquent and able address along this line was convincing. From the standpoint of the patient's serenity and economy, the house call is necessary. In some places the hospital load is very heavy and house calls help to keep down the overflow. House calls should be very helpful to the doctor in general practice by furnishing him first-hand information on his patient in all of his relations to life. It has always been good practice to treat the patient as well as his disease. With the wonder drugs at hand many patients can be very efficiently treated in the home. And, too, it affords the doctor an opportunity to get a little fresh air and to clear his mind.

WHAT OTHER GROUP CAN MATCH THEM?

Dr. Lawrence W. Long was the gracious host to the Fifty-Year Club this year at Biloxi. This generous gesture was duly and deeply appreciated. We have sixty-seven members of the Fifty-Year Club living. Dr. Long also welcomed a number of distinguished visitors to the luncheon, among them being Drs. Dwight H. Murray, George Lull, C. H. Ricks and Howard Nelson, and Mr. C. P. Loranz also. Dr. Murray made the observation that if the 67 doctors had given gratis services as much as one thousand dollars per year that they have already contributed $3,350,000 in practice to their people.

CHARITY HOSPITALS OUT OF DATE

Every Hill-Burton Hospital is set up to use one bed in ten for indigent if it is needed. This is a fine plan. The patient can select the doctor he wants, the doctor makes no charge, the state pays the six dollars per day for his room. This plan brings care to the indigent patient in the hospital nearest his home and it gives him the free choice of a doctor. Our five state-owned and operated hospitals for many years just served in the main as local hospitals for the county in which they were located. They are now fifty years out of date and are not really needed. Anyway we don't think it is good to segregate white people just because one has more money than another and at the same time give him a doctor whom he may not choose, breaking the doctor-patient relationship.

HEALTH BUILDING

News Report: "Governor J. P. Coleman has announced the New State Board of Health Building to be constructed in Jackson will be named in honor of Dr. Felix J. Underwood, veteran state health officer. The building will be erected in north Jackson at a cost of about one and one half million dollars". For the interest the governor has taken in this health facility he is to be congratulated and praised. It is most fitting also that the building be named in honor of Dr. Felix J. Underwood, in the field of public health known around the world, and beloved in his own state. He has brought to our state the very finest service in public health. The accumulated health values he has brought to our own state would build a monument to his memory higher than the eye of man could see, and perhaps beyond the vision of the mind of man to conceive.

Dr. Underwood has public health vision and he has ability to make his dreams come true. He is one of our greatest organizers. The thoroughness of the different departments in the state organization, challenges the admiration of any close observer. Our victories over disease in Mississippi have been beyond the national average. When we think of the victorious march of medicine, over malaria, typhoid, and hookworm, we stand in awe of what has been accomplished.

As a rule the relation between public health and the medical profession in our state has been cooperative and good. This has been very important. Along with Dr. Underwood's driving interest for public health he has not failed to hold the medical profession, the doctors, with his right hand.

The victories of medicine have been wonderful, but the needs are still great. A hundred thousand accidental deaths in our nation each year with 10,000,000 injuries, mental illness with one in ten involved, polio still in our midst and the ravages of cancer, plus a mounting cost of medical care, stagger even the most optimistic mind.

The State Board of Health, with Dr. R. B. Caldwell of Baldwyn as chairman, has renamed Dr. Underwood as executive officer for another six years. We offer congratulations.

MEDICAL SCHOOL FIRST COMMENCEMENT

The University of Mississippi new School of Medicine will celebrate commencement on Sunday, June 16.

Although most graduations are "held" rather than "celebrated," this first commencement for Mississippi's newly accredited four-year school of medicine is cause for celebration by the University, the medical profession, and our lay citizenry.

Twenty-four candidates for the doctor of medicine degree will form up for the academic procession at 4:00 p.m. in Murrah Auditorium. They are the first physicians to complete their medical schooling within the state since 1910. That was the year three seniors were graduated in the ill-starred, one-session attempt to provide clinical training at Vicksburg Charity hospital.

From that date until the Medical Center in Jackson opened in 1955, only the basic sciences were offered by the Ole Miss School of Medicine.

Dr. Guy Caldwell of New Orleans, member of the AMA Council on Medical Education and Hospitals, will deliver the commencement address for this historic first graduation program.

Chancellor John Davis Williams will confer degrees. Dr. J. Moody McDill, pastor of Fondren Presbyterian Church in Jackson, will give the invocation, and Dr. Howard Nelson of Greenwood, new MSMA president, will administer the Oath of Hippocrates.

Dr. D. S. Pankratz, dean of the school and director of the Medical Center, has announced that there will be four candidates for the B.S. degree in nursing in addition to the round two dozen future physicians.

Members of the board of trustees, University officials, full and part-time faculty members, will walk in the academic procession and recession, wearing full academic regalia.

All commencement activities are scheduled for one-day, according to the commencement committee. Dr. W. Douglas Hudgins will deliver the baccalaureate sermon at 11:00 a.m. in the First Baptist Church.

At 8:30 a.m., the Medical Alumni association will entertain with a breakfast for the graduating classes and at 2:30 p.m., Chancellor and Mrs. Williams will receive the graduates, their families and friends at an openhouse in the foyer of the School of Medicine.

HEADS MSMA

Howard Alexander Nelson, M.D.

President, Mississippi State Medical Association

Howard Alexander Nelson was born at Tunica, Mississippi, July 1, 1911. He received his premedical education at the University of Mississippi, completing his undergraduate work in 1933, and his M.D. degree from Tulane University, New Orleans, in 1937. Dr. Nelson interned at Employees' Hospital Fairfield, Alabama, 1937-38, and had residency training in the same institution through 1940. The same year, he was licensed to practice medicine in Mississippi and located at Greenwood where he now resides.

Dr. Nelson has been active in medical organization at county, state, and national levels for years. He has served with distinction as secretary of the Delta Medical Society, his home society. At the state level, he has held a number of important committee posts including chairmanships of the Committee on Maternal and Child Care, Committee on Cancer Control, and the recent Reorganization Commission. He served as Councilor of the First District and as a member of the Committee on Medical Service, 1955-56.

Since 1953, he has served as a member of the American Medical Association Committee on Maternal and Child Care. He was named president-elect of the state association during the Centennial Annual Meeting at Jackson, May 10, 1956.

Dr. Nelson was inaugurated president of the association at Biloxi on May 16, 1957, during the eighty-ninth annual session in the 101st year of the association. Dr. and Mrs. Nelson reside on River Road at Greenwood; they have three children.

STATE MEETING

More than 700 physicians, Auxiliary members, exhibitors, and guests met at Biloxi, May 13-16 as the eighty-ninth annual session of the Mississippi State Medical Association was observed.

Dr. Howard A. Nelson, Greenwood, was inaugurated president on May 16, succeeding Dr. H. C. Ricks, Jackson. Dr. Guy T. Vise, Meridian, was selected as president-elect and will be inaugurated at the 1958 meeting at Jackson.

Auxiliary members, meeting concurrently with the association on May 14, installed Mrs. A. E. Brown, Columbus, as 1957-58 president. She succeeds Mrs. Joseph B. Rogers, Oxford. Mrs. Mayo Flint, Meridian, was named Auxiliary president-elect.

The widely varied program — built on the "something for everyone" concept — included twelve separate scientific programs offering sixty papers. The total included six specialty societies and the six regular scientific sections of the association. Fifty exhibitors made up the largest technical exhibit in the association's history and the sixteen scientific exhibits presented were hailed as outstanding. Dr. J. T. Davis, Corinth, won the Annual Gold Medal Award for the best scientific exhibit. His subject was "Surgery of the Hand."

Highlights of the occasion included the annual public meeting during which Dr. Dwight H. Murray, Napa, California, president of the American Medical Association, delivered the address. Dr. H. C. Ricks, 1956-57 president, delivered his annual oration entitled "Mississippi Medicine—Century II." The Distinguished Service Oration was delivered by Dr. M. Q. Ewing, Amory; the subject of the oration was the late beloved Dr. J. Rice Williams, Houston, who for many years served as speaker of MSMA's House of Delegates.

Adding something new in social occasions, the Delta Medical Society gave a reception honoring

Dr. and Mrs. Nelson immediately following the public meeting. About 300 guests attended.

Delegates tabled for one year the report of the Reorganization Commission but concurred in the concept and spirit of the plan advanced. U. S. citizenship was made a prerequisite for election to membersip in MSMA. A study of voluntary prepayment plans and insurance was ordered to discover ways of providing more realistic fees for medical or non-surgical services.

Physicians were urged to report professional liability suits promptly to the Council and MSMA policy on veterans' medical care was revised to approve only treatment in VA hospitals of service-connected cases.

Delegates went on record supporting vigorously the Jenkins-Keogh bills now before Congress which propose a tax deferment on retirement savings for self-employed persons. A resolution by the Delta Medical Society opposing Sunday medical meetings not of an emergency nature was adopted.

Disapproval of full service prepayment or insurance plans under which the physician would render full service for whatever benefits were allowed was expressed. The historic position of the association of opposition to corporate medical practice was reaffirmed, stating specifically that all professional fees should be paid directly to the physician rendering service to the patient.

A new policy in the field of industrial health was adopted urging pre-employment physical examinations, exclusion of heart conditions from workmen's compensation benefits, new legislation to stimulate employment of the physically handicapped, and early-return-to-work programs for compensation recipients.

A new study by the Committee on Maternal and Child Care of prenatal mortality was approved and more adequate mental health facilities in the state were asked.

Reaffirmation of MSMA's position urging free choice of physicians was voted and a comprehensive study of indigent medical care was directed with a view toward implementing a more realistic program. Every physician was encouraged to assist in nurse recruitment and opposition to federal income tax on State Medical Education Board scholarships was voiced.

Extracurricular activities included a physicians' fishing rodeo during May 11-13, made all the better by perfect weather; alumni dinner occasions for Ole Miss, Tulane, and Tennessee added to the successes of the meeting.

One of the groups who found the fishing fine the week of the state meeting included, left to right: Mr. James Brodie, Biloxi; Dr. Archibald Hewes, Gulfport; Dr. Dick Street, Vicksburg; Dr. Gerald Wessler, Gulfport, Dr. Ed Hamilton, Gulfport; Dr. Fred Sandifer, Greenwood; Dr. Ed Melvin, Gulfport; and the cook for the party, Willie Wooten.

Delegates set the ninetieth annual meeting for Jackson, May 13-15, 1958.

SOUTHEASTERN SURGICAL CONGRESS 1958 PRIZE SCIENTIFIC PAPER AWARD

The Southeastern Surgical Congress announces its annual prize Scientific Paper Award for 1958. The best unpublished contribution on surgery or allied subjects will be awarded $100.00 and expenses for the author to attend its next annual meeting in Baltimore, Maryland.

The contest is open to residents in AMA approved residences. Three copies of the paper should be sent to the councilor of the state in which the resident is living before December 1, 1957. The Councilor's name may be obtained by writing to the home office of the Southeastern Surgical Congress at 701 Hurt Building Atlanta, Georgia.

NEW ORLEANS GRADUATE ASSEMBLY

The twenty-first annual meeting of the New Orleans Graduate Medical Assembly will be held March 3-6, 1958, headquarters at the Roosevelt Hotel.

The following officers and members of the executive committee have been elected for this year:

Dr. Charles L. Brown, president; Dr. J. O. Weilbaecher, Jr., president-elect; Dr. Max M. Green, first vice-president; Dr. Joseph N. Ane, second vice-president; Dr. M. M. Hattaway, third vice-president; Dr. Maurice E. St. Martin, secretary; Dr. Ralph M. Hartwell, treasurer; Dr. V. Medd Henington, director of program; Dr. Sam Hobson, assistant director of program; and Dr.

H. Reichard Kahle, assistant director of program.

Executive Committee: Dr. Eugene H. Countiss (retiring president), Dr. George D. Feldner, Dr. W. E. Kittredge, Dr. George H. Hauser, and Dr. Hugh T. Beacham.

EXAMINATIONS FOR LICENSE

Examinations for license to practice medicine in Mississippi will be held by the State Board of Health, June 24 and 25, at the Robert E. Lee Hotel, Jackson, according to Dr. Felix J. Underwood, executive officer.

Applications for medical examinations must be filed at least ten days before the date of examinations. Application blanks and full instructions may be secured by writing Dr. R. N. Whitfield, assistant secretary, Mississippi State Board of Health, Jackson, Mississippi.

ALCOHOLISM

The booth on alcoholism was a most interesting one among the scientific exhibits. Four and a half million chronic alcoholics in the United States constitute a big challenge to the medical profession as well as the economical and social future of our people. The consumption of alcohol as a beverage is too heavy a load on human society.

MEDICINE AND RELIGION

Eleven years ago all patients at Bellevue Hospital in New York had to be seen by a minister. This recognition of the importance of religion by a hospital was then termed unique.

Today the once-unique has become the commonplace. Of the 7,000 hospitals in the United States, 1,100 have some religious affiliation and most have available the services of ministers of three major faiths.

This change is cited in an article and editorial appearing in the Journal of the American Medical Association. The point is that American medicine and religion are in closer accord today than in any period in modern times.

Why should this be so? The editorial suggests an answer: That the individual is re-emerging from the "part-of-the-mass" status which came with mechanization and specialization of society and, helped by the increase in leisure time that has resulted from the decline in working time, "wants to know more and more about himself and how he relates to all men and all things of all times."

Whatever the causes, medicine and religion seem to be on the threshold of a "unified field theory" of faith and health. Clergymen are developing a greater interest in medicine, especially as it applies to mental health. In some cases theological students are given training in ministering to the sick, while medical students are offered elective courses in religion to help them learn about the resources the church can offer them in their practice.

This is opening up great new frontiers of service to mankind. Its implications were well expressed by a professor at the Cornell University Medical College who said: "Very often we do not know what it is that brings about the recovery of the patient. I am sure that often it is faith which is a most important factor."

ANNOUNCEMENTS

J. T. Davis, M.D., F.A.C.S., announces the opening of his clinic for the practice of general surgery and medicine, 815 Childs Street, Corinth, Mississippi. Open house was held May 19.

DEATHS

DR. C. H. OTKEN

Mississippi friends have been informed of the death of Dr. Charles H. Otken in Falfurrias, Texas, on April 16. Dr. Otken was the son of the late Dr. Chas. H. Otken and Emily Lea Otken of McComb. He is survived by his wife; one daughter, Katie Otken; three sons, Henry Lea Otken, Dr. Chas. C. Otken and Frances P. Otken; two sisters, Misses Lois and Frances Otken; two brothers, Dr. Luther B. Otken and Mr. Gidiere Otken. He was the uncle of Dr. Roger L. Lewis and Miss Evelyn Lewis of Jackson.

Dt. Otken was born in 1878, received his medical education from Chicago College of Medicine and Surgery, Chicago, Ill., graduating in 1909.

DR. H. C. DENSON

Funeral services for Dr. Hugh Copeland Denson, 64, of Osyka were held April 10. The body was conveyed to Birmingham, Alabama, where final rites were said and interment in Elmwood Cemetery of that city.

Dr. Denson, a well-known physician, had resided in Osyka for the past 18 years. He was born July 23, 1892, in Alabama. Death came to Dr. Denson suddenly at his apartment adjoining his offices early on Monday morning.

Survivors include two sons, Hugh C. Denson, Jr., and Kenneth B. Denson, both of California; four sisters, Mrs. C. C. Pyler, Mrs. E. R. Martin, Mrs. P. H. Taylor, Mrs. W. S. Seals, all of Birmingham; two brothers, Robert J. Denson, Mobile, and O. G. Denson of Tuscaloosa, Alabama.

DR. C. H. INGRAM

Dr. Charles Herbert Ingram, 77, born in Kilmichael, died April 21 at St. Dominic's Hospital in Jackson after an illness of about two months.

Doctor Ingram was a steward in the Pickens Methodist Church, a member of the Pickens Masonic Lodge, the Eastern Star, and a Shriner. He had lived in Pickens since 1923 and was in his fiftieth year as a physician. He was educated at the University of Louisville, Ky.

Survivors include his wife, the former Miss Ash Henderson of Pickens; five daughters, Mrs. Euna Cavaniss of Ocala, Fla., Mrs. Grace Caldwell of Columbus, Mrs. Berniece Guion of Benton, Mrs. Laura C. Crawford, Pickens, Mrs. Betty Jo Young of Stirlingtown, La.; and one son, Lt. Col. James Lowrey Ingram, U. S. Army hospital, Nurenburg, Germany; and fifteen grandchildren; three brothers, Thomas Ingram of Crockett, Calif., Howard of Conroe, Tex., and Arlis Ingram of Jackson; two sisters, Mrs. Lula Love of Kilmichael and Mrs. Laura Oliver, Winona.

Diseases of the heart and circulation kill more than 800,000 people annually. An estimated 10,000,000 are afflicted, of whom 500,000 are children.

Woman's Auxiliary

OFFICERS

President	Mrs. A. E. Brown	Columbus
President-Elect	Mrs. Mayo Flynt	Meridian
First Vice-President	Mrs. Joseph B. Rogers	Oxford
Second Vice-President	Mrs. James L. Royals	Jackson
Third Vice-President	Mrs. F. E. McCullough	Jackson
Fourth Vice-President	Mrs. Durward Blakey	Clarksdale
Recording Secretary	Mrs. A. T. Tatum	Hattiesburg
Treasurer	Mrs. J. D. Simmons	Cleveland
Historian	Mrs. Harvey F. Garrison	Jackson
Parliamentarian	Mrs. Lamar Bailey	Kosciusko

COMMITTEE CHAIRMEN

Program	Mrs. Verner Holmes	McComb
Legislative	Mrs. David B. Wilson	Jackson
Bulletin	Mrs. James T. Thompson	Moss Point
Nurse Loan Fund	Mrs. Edward Nortn	Jackson
Nurse Recruitment	Mrs. George Townsend	Forest
Doctor's Day	Mrs. N. C. House	Batesville
Preventorium	Mrs. Ray Biggs	Sanatorium
Mental Health	Mrs. H. C. Ricks	Jackson
Memorial	Mrs. Aubrey Harris	Tupelo
Budget	Mrs. S. B. Platt	Columbus
Revisions	Mrs. Toxey Hall	Belzoni
AMEF	Mrs. Lowry Rush, Jr.	Meridian
Cancer Research	Mrs. John B. Howell, Jr.	Jackson
Research and Romance	Mrs. Lee Reid	Canton
Civil Defense	Mrs. C. M. Roberts	New Albany

COUNCILORS

First District	Mrs. Howard A. Nelson	Greenwood
Second District	Mrs. Michael E. Shaheen	Como
Third District	Mrs. L. L. McDougal	Tupela
Fourth District	Mrs. M. S. Riddell	Winona
Fifth District	Mrs. Wm. F. Hand	Jackson
Sixth District	Mrs. James A. Lauderdale	Meridian
Seventh District	Mrs. H. L. Boone	Laurel
Eighth District	Mrs. H. A. Whittington	Natchez
Ninth District	Mrs. George W. Hicks	Pascagoula

NEW OFFICERS ASSUME TASKS

You will note the new roster of officers for the state organization as you run down the masthead. Some of them are veteran members, others bring new ideas and ways of promoting Auxiliary endeavors as they add their respective personalities.

STATE MEETING

The Auxiliary program was effectively streamlined to a one-day execution of business at the Buena Vista Hotel on the Coast, climaxed by the luncheon at the beautiful Edgewater Gulf, lovely Mrs. Joseph B. Rogers, president, presiding at both sessions.

Most important convention guests of the Auxiliary were Mrs. O. W. Robinson, Paris, Texas, Southern Medical Association Auxiliary president, and Mrs. Robert Flanders, Manchester, New Hampshire, American Medical Association Auxiliary president. The messages of both imparted a special ingredient of purposefulness along with the happy social atmosphere of the meeting. Mrs. Flanders urged more personal attention to womanly graces and virtues which reflect good will to the profession. She reemphasized the important role of the doctor's wife in public relations . . . "to think well of yourself and proclaim this fact to the world, not in loud words but in great deeds."

Hospitality of the Coast doctors' wives included a greatly enjoyed coffee at historic Beauvoir, at which Mrs. A. C. Hewes of Gulfport, was chairman.

NEW PRESIDENT

MRS. A. E. BROWN

Our new Auxiliary president brings to her office a fine leadership born of many years' work in the organization, both at the local level and at various posts of the state organization. Her warm and genial personality, her happy faculty of winning enthusiastic cooperation from others, and her consistency of purpose, drive, and accomplishment, assure us of a year of outstanding activity under Dorothy Brown's leadership.

So successfully has Dorothy filled the role of doctor's wife in the cultural atmosphere of Columbus, even a resident of her native Chicago might doubt for a moment that she had ever been "north." She met Dr. Brown while they were both at Northwestern University, they married and lived three years in Iowa for Dr. Brown's first practice, then moved to Columbus in 1934.

Active in church and civic work, Dorothy is a member of the First Presbyterian Church. In the denomination Auxiliary she has been secretary, treasurer, chairman of world missions, chairman of annuities and relief, circle leader, and president of the Columbus chapter of the National Association of Junior Auxiliaries. She works in all of the national health drives and is a board member of the Lowndes County Polio Foundation. Our prexy has also held most of the offices of the Lowndes County Medical Auxiliary, and served as secretary, fourth vice-president and councilor at the state level. She has been a member of the Peyton Study Club, of the Columbus Rose Club, the Ladies Luncheon Club, and two sewing clubs.

Our president's hobbies are golf, sewing and gardening, and bridge when she can find the time. However, she's taking the advice of her placecard at the state meeting luncheon at which she was installed president, which advised "Get interested in a new hobby and make new friends!" Those who were present remember the clever little miniatures which suggested each honoree's personality. The incoming president's place was marked by a little flower pot which held the above advice. "So my chief hobby this year will be our medical Auxiliary and making friends among its members," she declares.

INDIFFERENCE

If one were to ask a group the simple question, *What is the most destructive force in the world?* it is interesting to speculate upon what the replies would be—war, disease, storms and fires, alcohol.

But, after consideration, one might place it in the habits of men, in indifference.

Indifference of employees, clerks in stores, workers in industry, is held to be one of the greatest problems of our business economy.

Indifference is insidious in its operation. It enlists men and women in its destructive force, who at heart profess to be supporters of the very things which by their indifference they help to destroy. They believe in good government, yet by their indifference and lack of information, destroy it.

The best antidote for indifference is formed by a combination of two things, interest and action. Interest alone is not sufficient, but if a person becomes genuinely interested in his government, community, church, job, or professional group, and then supplements his interest with intelligent action, he becomes a part of the most constructive force in the world.

The effectiveness of a group of doctors' wives is determined by how interested they become in the lay mind's attitude toward doctors of medicine and the legislation that might limit the highest practice of the art—that of consecrating one's life to its ministry wholeheartedly, unselfishly, and honestly.

Gastro-intestinal Bleeding in the Pediatric Patient[*]

Clifford D. Benson, M.D.[†], and Charles R. Reiners, M.D.[†]
Detroit, Mich.

EVIDENCES of bleeding into the gastro-intestinal tract in infants and children are always alarming to the parents and should always be considered as a serious symptom by the physician. It is true that in a majority of the cases the bleeding will be found to originate from some trivial and transient cause. In a fair percentage the source of bleeding will never be found even after the most extensive study. In the remaining group, however, the bleeding may represent the only symptom of a serious but readily curable lesion. Analysis of the history supplemented by careful observation of the material passed usually aids greatly in determination of the site of bleeding. Bleeding can be evidenced by hematemesis, melena and passage of red blood from the rectum. Blood passed from the rectum can be mixed throughout the stool or streaked on the outside of the formed stool. The passage may be composed entirely of blood. The implications of these findings are obvious but often the history is not exact and actual observation of the material by the physician is required to determine beyond doubt its precise nature.

In this discussion we will deal first with those conditions which are encountered in newborns and infants and then progress through conditions more likely to be found in older children. Chemical confirmation of the presence of blood is helpful if there is doubt.

HEMORRHAGIC DISEASE OF NEWBORN

This condition is far less than common than it formerly was due to the routine administration of vitamin K to mothers prior to delivery. It is still seen, however, and should be the first diagnostic thought when GI hemorrhage of any type is encountered in the infant less than two weeks old. Signs of hemorrhage in other parts of the body need not be present and usually are not. Diagnosis can be supported by the demonstration of depressed serum prothrombin levels. If the bleeding stops after administration of vitamin K the diagnosis can be considered established.

ACUTE PEPTIC ULCER

Acute peptic ulceration may occur in the esophagus and stomach as well as in the duodenum. These ulcers occur in infancy and particularly in the neo-natal period more frequently than heretofore realized. The only signs of peptic ulcer in this age group are hemorrhage and perforation. How often they are responsible for vomiting cannot be stated. It has been postulated that many cases of vomiting attributed to pylorospasm may in actuality by pylorospasm resulting from an ulcer of the duodenum or pylorus.

Bleeding from peptic ulcers can be manifested as hematemesis, melena or both. It can be quite massive just as in the adult. Ulcer should be considered in any case of upper GI bleeding in the neonatal period which cannot be demonstrated to be due to hypoprothrombinemia.

Unfortunately the x-ray diagnosis of these lesions is often difficult[4]. Neonatal peptic ulcers are often superficial and may be difficult to demonstrate even on direct inspection of the duodenal mucosa at autopsy. Sometimes serial sections of suspicious areas may be necessary to discover them.

Therapy should be conservative since these are acute ulcers and it has not been established that they have a tendency to chronicity.

A history of difficult labor or birth trauma will be obtained in many of these cases. About half of them will have some severe central nervous system injury[2].

ENTEROCOLITIS

Bleeding from the rectum in some degree is noted in about 10 per cent of the cases admitted to the hospital with enterocolitis[5]. The bleeding is minor in these cases and is only a part of the entire symptom complex. Very rarely is it the presenting complaint or predominant feature.

INTUSSUSCEPTION

A minor degree of bleeding occurs in about two-thirds of the cases of intussusceptions. It is again part of a symptom complex rather than the presenting complaint. The ileo-ileal type of intussusception is not likely to cause bleeding. It is the ileo-colic type which is accompanied by the passage of bloody mucus. By the time this occurs a mass is generally palpable[7]. The characteristic history of severe colicky pains recurring at regular 10-15 minute intervals is usually obtained. The presence of a sausage-like mass, signs of small bowel obstruction and emptiness of the right lower quadrant all support the diagnosis. Barium enema is, of course, diagnostic.

---

[*] From the Department of Surgery of Wayne State University College of Medicine, Children's Hospital of Michigan, and Harper Hospital, Detroit, Michigan.

MECKEL'S DIVERTICULUM

The most common cause of massive bleeding into the GI tract in infants under two years of age is ulceration in a Meckel's diverticulum. These diverticulae occur in about two per cent of the population. Bleeding is the most frequent complication and occurs in about 40 per cent of those which give rise to symptoms[2]. This bleeding is most likely to occur before the child is two years old but may occur later, even occasionally in adult life. The ulceration responsible for the bleeding results from acid and gastric enzymes elaborated by ectoptic gastric mucosa in the diverticulum.

The bleeding from Meckel's diverticulum occurs in two forms[7]. The first and most dramatic is the sudden massive hemorrhage. Stool may at first be tarry but soon becomes dark red or even bright red if the bleeding is sufficiently brisk.

The second form is the recurrent mild episodes of bleeding in which the blood remains in the bowel long enough to be chemically changed. In these cases the blood is a dark or brick red, occasionally black and may be mixed with stool. It is significant that bleeding from a Meckel's is almost always of considerable degree even though it may not occur in a single massive episode. Brayton and Norris[2] report that 90 per cent of their cases of bleeding from Meckel's diverticulum had low hemoglobin levels. One-third of them passed clots.

The diagnosis of Meckel's diverticulum must be made in the final analysis at laparotomy, operation should be undertaken only after thorough diagnostic workup has failed to demonstrate another cause of bleeding. This workup should include proctoscopy and barium enema to exclude the possibility of local causes in the colon and rectum such as polyps, fissures, etc. Thorough blood study including consultation with a competent hematologist should rule out leukemia or other blood dyscrasia.

Even after this exhaustive workup, laparotomy is undertaken as the final diagnostic procedure of the series. We feel it should be explained to the parents in this fashion since there are, unfortunately, many cases in which no cause for bleeding is found at laparotomy.

X-rays following a barium meal usually do not demonstrate the diverticulum. Efforts in this direction have been so uniformly unsatisfactory that they have been abandoned by nearly all who have had much experience in this field.

ANAL FISSURES

Fissures are probably the most common cause of bleeding from the rectum but are not usually a cause of great concern to the physician. The history of constipation and passage of hard stool is almost always blamed along with evidence that defecation is painful to the infant. The blood streaks the outside of the formed stool and is bright red. The situation is usually corrected by giving the infant a mineral oil emulsion or one of the newer surface tension lowering agents daily for several weeks to keep the stool soft and allow the fissure to heal.

Rectal prolapse, hemorrhoids, and fistula *in ano* can occasionally cause the same type of bleeding as seen with fissures but the cause should be apparent if a careful anoscopic examination is done.

BLOOD DYSCRASIA

Leukemia, thrombocytopenic purpura, pseudohemophilia, hemophilia, etc., all may cause bleeding from any part of the GI tract. In the majority of the cases the disease is known or is evident due to evidences of bleeding from other sites such as skin, gingivae, urinary tract, hemarthroses, etc. Occasionally, however, the GI hemorrhage will be the presenting symptom. Absence of other evidences of bleeding never should exclude the possibility of a blood dyscrasia.

It should be a standing rule that sufficient blood is obtained for complete blood count, platelet count, prothrombin time and venous clotting time prior to the administration of transfusion to any undiagnosed case of GI bleeding. Blood for these studies can be drawn along with the blood for typing and cross-matching when the child is admitted.

ESOPHAGEAL VARICES

Portal hypertension and the resultant dilatation and varix formation in the esophageal plexus may occur at any time but is more common in later childhood. The causes, however, are often congenital or resulting from thrombosis of the portal vein in the early postnatal period as shown by the classification of Jordan, et al[6]. The rapidity with which the varices develop and bleeding ensues is dependent on a variety of anatomical and physiological factors which vary in every case. When bleeding does occur, it is very likely to be massive in amount. It is the most frequent cause of massive hematemesis and, of the local lesions, the one most apt to cause exsanguination.

The diagnosis of portal hypertension is rarely made in children prior to the first bleeding episode. It is most difficult to establish in many cases even after attention is focused on the upper GI tract by a bleeding episode. Liver function tests may or may not be altered depending on whether the obstruction to portal circulation is intrahepatic or extrahepatic in the portal vein or its tributaries. Splenomegaly is usually present but there are many causes of splenomegaly. X-ray demonstration of esophageal varices is adequate evidence, but inability to demonstrate varices does not mean they are not present. Esophagoscopy can be employed but is hazardous because of the possibility of starting more bleeding.

POLYPS

Polyps of the rectum and colon occur occasionally in infants but the majority of cases are in older children. The type of bleeding depends in most part on the location of the polyps. The majority are located in the rectum and sigmoid colon and the blood from these is bright red. The blood is streaked on the outside of the stool or is passed at the end of defecation or several minutes after the child has left the stool. The pedunculated polyps of this region may prolapse out the anus with defecation[3].

Polyps higher in the colon or on the right side of the colon are far more likely to cause mild chronic bleeding with the blood mixed throughout the stool. Often this goes unrecognized and the child is seen because of anemia. Occasionally pedunculated polyps of this region will cause intussusception. This may be of a recurring nature. It should be mentioned that these polyps have the same malignant potential as polyps of the colon in adults. The occasional case of rectal or colon carcinoma in the juvenile age group undoubtedly arises from this type of lesion.

ULCERATIVE COLITIS

This disease becomes more common as the age of the child increases but again may be encountered in the very young. All cases of ulcerative colitis bleed in some degree during periods of activity, and the bleeding may be massive. Usually the attendant symptoms of recurrent diarrhea, weight loss, crampy pain, low grade fever, etc., are prominent enough to indicate the diagnosis. Sigmoidoscopy and barium enema will usually dispel any remaining doubts as to the source of bleeding. The differentiation of this disease from one of the specific causes of ulceration of the colon such as bacillary or amoebic disease is not generally too difficult.

The following cases serve to illustrate difficulties in diagnosis and treatment which may be encountered:

CASE NO. 1

POLYP

G.S.: This 7-year-old male was admitted to the hospital on 1-4-54 with a history of repeated attacks of abdominal pain, loss of appetite, and bright blood in the stool. These attacks lasted 2-3 days and occurred at 3-6 months intervals. They had begun in his 4th year and attempts to prevent them by alteration of diet had been unsuccessful. Previous barium enema, hematological study and sigmoidoscopy, 1 year prior to this admission had not demonstrated any lesion which could account for the bleeding.

PHYSICAL EXAMINATION: Revealed a slightly underdeveloped, pale child with no other evidence of abnormality. There was dark brown stool in the rectum.

LABORATORY: Hemoglobin 8.8 gms. Hypochromia, and slight anisocytosis seen on stained smear of blood. WBC 5,250 normal differential. Urinalysis —normal. Wassermann—negative. Stool for occult blood + to ++.

SIGMOIDOSCOPY 1-5-54: No abnormality seen. Barium enema 1-6-54; Polyp visualized by air contrast technique in the mid sigmoid region.

OPERATION: 1-11-54: A single pedunculated polyp (3.5x2x1.5 cm) was found in the mid-sigmoid and excised along with its pedicle. Examination of proximal and distal colon with a sterile sigmoidoscope revealed no more polyps.

Convalescence—uneventful.

FOLLOW-UP: There have been no further episodes of bleeding, and no evidence of additional polyps during a 3-year follow-up period.

DISCUSSION: The occurrence of pain and loss of appetite associated with the episodes of bleeding suggest that the polyp was acting as the leading point of a periodically recurring intussusception of the sigmoid colon. Sigmoid and rectal polyps frequently prolapse (or intussusception) out the anal orifice, following bowel movement. Complete work up of the blood coagulation system, etc., was omitted on this admission because the site of bleeding was identified early by x-ray studies.

CASE NO. 2

ESOPHAGEAL VARICES

J.C.—This 5-year-old white male was first admitted to the hospital 5-5-55 with a history of hematemesis and melena. On two occasions in the previous 24 hrs. he had vomited a cupful of dark clotted blood. He had several tarry stools prior to admission.

PHYSICAL EXAMINATION: Blood pressure 80/-40, Pulse 152. Petechiae on face and extremities, palor. Spleen palpable 2 finger breadth below costal margin. Tarry stool in rectum.

LABORATORY: Hemoglobin 5.1 gms, WBC 6000, Platelets 95,550. Prothrombin 16 sec. Control 12.6 sec. Ser. protein 5 gms%; Alb. 3.0 gms%, Glob. 2.0 gms%, Thymol turb. 1.82 units.

HOSPITAL COURSE: Transfusion of 1325 cc. whole blood raised Hbg. to 10.3 gms. Bleeding from GI-Tract apparently stopped. Child developed measles and was transferred to contagious disease hospital on 5-8-55. Diagnoses at time of transfer: 1. Measles. 2. Thrombocytopenic purpura.

Second Admission: 5-23-55

C.C.—Recurrence of petechiae and ecchymoses on face, trunk and especially on extremities. No further GI bleeding.

PHYSICAL EXAMINATION: Normal except for: Spleen palpable 6-7 cm. below costal margin. Superficial epigastric veins dilated and plainly visible. Ecchymosis over leg measuring 2 cm. in diameter.

LABORATORY: Hbg: 11-12 gms. WBC 3-6000. Platelets varied from 47,000 to 187,000 on numerous examinations. Prothrombin 15 sec: Control 13 sec. Serum protein 7.5 gms%; Alb. 4.7 gms%; Glob. 2.8 gms%. Thymol turb. 12.0 units. Ceph. Chol. floc. 2+ in 48 hrs. Bilirubin 0.3 mgm% total. BSP retention 0% in 45 min.

X-RAY: Upper GI series—normal except for irregularity of the mucosal pattern of the lower esophagus suggestive of esophageal varices. Barium enema negative.

HOSPITAL COURSE: The child did well and the problem was one of differentiating between diagnoses of idiopathic thrombocytopenic purpura and portal hypertension with esophageal varices and secondary hyperspleenism. The latter diagnosis was deemed more likely.

OPERATION: 6-27-55. Exploratory operation was performed through a left thoraco-abdominal incision. The initial intent was to perform a splenorenal shunt, but the spleen was found to be a multiloculated organ. There were three major segments to the spleen, each with its own blood supply. Dissection along the tail of the pancreas failed to reveal a vein large enough to allow a spleno-renal anastomosis. Splenectomy was performed. Portal pressures were measured at 340 mm of saline. The portal vein appeared to be patent. A Meckel's diverticulum was found and removed. Convalescence from this procedure was uneventful.

Third Admission: 6-5-56

Had been well following splenectomy until 5-1-56 when he vomited blood and then had two tarry stools.

PHYSICAL EXAMINATION: Pale, Blood Pressure 106/70. Prominent superficial veins over abdominal wall. No definite hepatomegaly.

LABORATORY: Hbg. 11.9 gms. RBC 4.3 million, WBC 6,900, PMN 76%, Lymph 17% Baso. 2% Mono 5%, Reticulocytes 1%, Hematocrit 33%, Platelets, abundant, too high for actual count. Total protein 7.2 gms%; Alb. 5.0 gms%; Glob. 2.1 gms%. Urinalysis normal. Prothrombin time 13.4 sec. Control 12.4 sec. BSP retention 0.0%, Venous clotting time 4.2 min. Bleeding time 5.0 min. Thymol turb. 1 unit; Ceph. floc. 48 hrs. negative. X-ray—Upper GI series: Large esophageal varices involving lower half of esophagus.

OPERATION: 6-8-56: Endotracheal anesthesia Ether N_2O, and O_2. Right abdominal component of a proposed thoraco-abdominal incision was made and portal pressure of 340 mm. saline were obtained by cannulation of an omental vein. The thoracic extension of the incision was made through the ninth interspace, and the normal appearing liver was rotated out of the abdomen. Side to side portocaval anastomosis was performed. Post-operative portal pressures were attempted but could not be taken for matters of technique. Waterseal closed drainage was employed for the chest wound.

POST-OPERATIVE COURSE: Chest tube removed on third post-operative day. One week post-operatively the patient developed acute tonsillitis. This responded to antibiotic therapy and the course was otherwise uneventful. There has been no bleeding during a 10 month follow up period.

SUMMARY

The diagnostic features of the more commonly encountered causes of gastro-intestinal bleeding in the pediatric age group have been reviewed. While many of the cases will be found to result from trivial cause, the symptom of gastro-intestinal bleeding cannot be disregarded or treated lightly. Exploratory laporatomy is indicated in selected cases when no cause can be found after thorough study.

BIBLIOGRAPHY

1. Alway, R. H., Gross Bleeding from the Alimentary Tract in Infants and Children, Am. Surg. 20:216, 1954.
2. Brayton, D., and Norris, W. J., Gastrointestinal Hemorrhage in Infancy and Childhood. JAMA, 150:668. Oct. 1952.
3. Gross, R. E., The Surgery of Infancy and Childhood, pp. 217, 370-376, Saunders, Philadelphia, 1953.
4. Hodgson, J. R., and Kennedy, R. L. J., Radiology 63:535, Oct. 1954.
5. Jordan, P., and Patton, T. B., and Benson, C. D., Portal Hypertension in Infants and Children; Arch. Surg. 72:879, May, 1956.
6. Ortiz, R., Boffes, T. G., and Potts, W. J., Gastrointestinal Bleeding in Infants and Children; Quart. Bulletin Northwest. U. Medical School 27:901, 1953.
7. Penberthy, G. C. and Benson, C. D., The Complication of Meckel's Diverticulum in Infants and Children. Surg. Cl. North America, Oct. 48.

1515 David Whitney Bldg.

When merit has been achieved, do not take it to yourself; for if you do not take it to yourself, it shall never be taken from you.—Lao-tse

Bladder Dysfunction*

ROBERT LICH, JR., M.D.†
Louisville, Kentucky

Disturbances of urination are not necessarily a manifestation of bladder pathology. The activities of the bladder may reflect distant disease and a thorough interrogation of the patient's urinary habits and abilities may disclose pathology totally unassociated with the urinary tract. The most obvious example being the polyuria of diabetes mellitus.

The cause of disturbances in urination, wherein bladder pathology is present, may be divided into two major groups: 1) myogenic or local muscular dysfunction due to obstruction and 2) neurogenic or disturbances to the nerves innervating the bladder. At first glance it would seem that these two conditions would not present a diagnostic problem; however, this is not always true and often the two conditions present similar findings. Differentiation is possible only by a detailed study of the patient's general condition as well as his urologic status.

The tired and hesitant urinary stream of the aged that virtually falls off the urethral meatus is diagnostic of diminished intravesical pressure. This means that the bladder muscle is exhausted and can not muster the force necessary to initiate urination instantaneously and even then it lacks force due to detrusor decompensation. Detrusor, like cardiac, decompensation follows a similar pattern and both are preceded by a variable period of vesical hypertrophy which reach their limits and failure or decompensation ensues. If bladder decompensation is complete urination is impossible, but as compared to the heart it is not nearly so rapidly tragic; although unattended it leads to renal failure.

It is important to recognize the changes of urination associated with detrusor hypertrophy and avoid the much less reversible situation of detrusor decompensation. During bladder hypertrophy emptying or voiding is frequent and scant. In other words, urinary frequency without noticeable straining or alteration of the urinary stream. This process gradually worsens, but owing to its incipiency the patient is unaware of its progression.

The cause of the above mentioned symptoms are obstructions of the urinary tract beyond the bladder; namely, in the urethra. These obstructions may be close to the vesical neck such as occurs in hypertrophy of the prostate or may be due to a stricture in any portion of the urethra remembering that strictures of the female are not uncommon. They may be either acquired (inflammatory, traumatic or prostatic hypertrophy) or congenital (urethral meatal stenosis, muscular hypertrophy or fibrous stenosis of the vesical neck).

There is a fundamental difference between the urinary stream of a patient with a urethral stricture and that associated with an enlarged prostate. This difference is due to the location of the obstruction; i.e., the further from the urethral meatus the less force of the urinary stream. It is identical to kinking a garden hose a few feet from its opening as compared to partially obstructing its outlet. We know to gain additional force to water the flowers that incompletely obstructing the outlet of the hose results in a smaller but more forceful stream. On the other hand, to kink the hose a few feet from its outlet destroys the stream and offers the advantages of a soaker. The same applies to the urinary stream. A stricture in the anterior urethra will result in a proportionally small, but powerful stream. Whereas an obstruction at the vesical neck causes the urine to flow with little or no force and virtually falls from the urethral meatus.

Neurologic lesions affecting the detrusor result in the prostatic type urinary stream. The bladder is unable to exert sufficient force to expel the urine except in a very slow stream, frequently and in small amounts. Furthermore, in lesions of the postero-lateral columns of the spinal cord there is associated sensory disturbances and the patient is not aware of his incompletely emptied bladder. The bladder continues to over distend until its limit is reached and urine leakage occurs either intermittently or continuously. Bed wetting usually precedes diurnal incontinence due to relaxation during sleep.

These neurogenic disturbances of vesical atonia, over distension, leakage and lack of urinary force are not limited to the traumatic and luetic group. In fact, they are prominent in the not infrequent cord lesions associated with diabetes mellitus, pernicious anemia, multiple sclerosis, arteriosclerosis or any condition in which the postero-lateral columns of the spinal cord are disturbed.

Another type of voiding, seen particularly in infants and children, is that which is associated with straining during urination with or without pain. Intermittently the infant or child becomes flushed, the temporal veins distend and there is passed but a small increment of urine. These symptoms are due to congenital obstructions of the vesical neck and whether they are muscular hypertrophy, fibrosis or urethral valves is of little moment. It is mandatory, if the urinary tract is to be saved from total destruction, that an immediate urologic survey is launched and corrective surgery executed. The diagnosis of bladder neck obstruction is easily established by catheterizing the child immediately post-voiding and if more than 10 cc. residual urine is found the child is in need of detailed study.

---

†Professor and Chief of the Section on Urology, Department of Surgery, University of Louisville School of Medicine, Louisville, Kentucky.

*Read before the Mid-South Medical Assembly in Memphis, Tenn., February 14, 1957.

Enuresis or bed wetting is not an unusual complaint in children, but one must take time to obtain a sufficiently careful history so that the diagnosis of enuresis is firmly established. It must be unequivocally ascertained that the urine leakage occurs only at night and that the child is always dry during the day. If inconsistence of urine occurs both day and night, we must know of its pattern; whether or not it is consistent, intermittent or continuous. An ectopic ureter emptying below the vesical sphincter may cause a continuous loss of urine. On the other hand, if the kidney, associated with the ectopic ureteral orifice, is sufficiently hydronephrotic it may leak only when the contiguous flank musculature compresses the kidney. Thus, the child may be wet intermittently during the day and continuously at night when the kidney and ureter are overfilled. One such child came to our attention in which after careful questioning the mother changed her story from one of pure enuresis and admitted irregular soiling of the child's clothes during the day during active play, but there was continuous urine leakage during long periods of inactivity or during the night. Pyelography demonstrated a hydronephrotic upper segment of a duplicated kidney and the ureteral orifice emptied just below the normal urethra in the vaginal septum. Heminephrectomy and ureterectomy solved the problem.

A severe bout of fever may be terminated by the sudden appearance of pronounced polyuria which may last for an hour or two or a matter of a day. Pyuria is not necessarily present. This peculiar picture of bladder activity is characteristic wherein the hydronephrosis is intermittently obstructive and during periods of stagnation the infection runs rampant and subsides suddenly when spontaneous drainage of the hydronephrotic kidney occurs. These patients may herald their period of polyuria with gastro-intestinal symptoms which may be of a few hours or a few days duration. This occasioned by the greatly hydronephrotic kidney disturbing the splanchnic nerves. It is well to remember that gastro-intestinal complaints in the face of a normal gastro-intestinal series suggests the need of a urinary tract survey.

Occasionally a patient notes that the urinary stream is suddenly interrupted and purely by chance he finds that by changing his position he can again initiate urination. This is due to a ball valve bladder neck obstruction and due usually to a bladder stone or a pedunculated tumor.

Hunner ulcer or interstitial cystitis causes continuous severe urinary frequency with point tenderness just above the pubis on bladder filling. The area of point tenderness and lack of pyuria distinguishes this condition from the intolerable frequency of bladder tuberculosis.

Urinary stress incontinence is seen most often in women and is due to an inadequate support of the vesical neck. The bladder capacity is normal and leakage occurs only during a sudden increase of intra-abdominal pressure; i.e., coughing, sneezing, laughing, lifting, etc. This symptom must be carefully differentiated from the pseudo-incontinence of a hypertonic bladder associated with irritative lesions of the vesical neck or certain neurogenic disturbances. True stress incontinence is surgically easily correctable; whereas, pseudo-incontinence is strictly a non-surgical problem.

The deep pelvic pain of the filling bladder which is interrupted by a brief comfort as the bladder is almost full only to recur as the bladder empties is characteristic of the urinary picture associated with active diverticulitis with vesical adhesions and detrusor inflammation. These unfortunates experience comfort only during the brief interval when the bladder is almost filled and there is a minimum of bladder wall excursion. In severe and persistent cases surgery must be employed and often is most difficult.

SUMMARY

Several of the more characteristic types of bladder dysfunction are discussed with reference to their cause and voiding pattern. The importance of a thorough investigation of all patients with bladder symptoms is stressed since vesical symptoms may be a manifestation of distant disease rather than local pathology.

Ideals Are Like Stars*

DWIGHT H. MURRAY, M.D.
President, American Medical Association
Napa, Calif.

With the end of my term of office now in sight, I feel a little like the fellow in the mile run. The race has been a long and grueling one, but now there is only the home stretch left. The tape is just ahead. After the race is finished there will be time to catch a breath, watch the next race and lend support to the new standard-bearer.

My own race undoubtedly will not find its way into the record books; my running time probably will not come close to a four-minute mile. But I have tried earnestly to run a good, hard race. I believe that is important, for as the famous physician, Sir William Osler, once said:

"To have striven, to have made an effort, to have been true to certain ideals—this alone is worth the struggle."

One of the ideals—perhaps the most important one—that has guided men during my term of office has been:

To leave medicine no less free than when I found it.

This is a principle that I wish every physician would embrace during his career and during his daily practice of his profession.

Thousands of physicians, I know, already have adopted this ideal. Others should. For if we all follow this principle, we will maintain and preserve the medical freedom that is ours today. And we will leave our medical successors with the same privileges and opportunities that we have in medicine now.

At the A.M.A. clinical session and upon other occasions I have called for individual and group action to support the freedoms of both doctor and patient. I say here again:

Guard our freedoms and strengthen them.

Sacrifice for them.

Fight for them.

And do not allow anyone to substitute fancy schemes for them. As both citizens and doctor, I say there is no substitute for freedom.

My 40 years in medicine and my many years of service to the A.M.A. and state and county medical societies have taught me that just as we must have freedoms in our profession we also must have medical idealism.

I know that the idealistic approach to life and to medicine often is regarded as immature or old-fashioned. The idealist is scorned, he is called a dreamer. Consequently, in our modern society, and sometimes in medicine, ideals too frequently are ignored, forgotten or lost completely.

But for me idealism represents the perfection we all hope to attain. We cannot abandon it; we cannot live without it.

Perhaps there is little possibility of us attaining the perfect in life or in medicine, but is this any reason for us not to make the attempt?

As a physician, I have seen tension, uncertainty and confusion growing daily in the lives of many persons—doctors included.

I do not like this trend; it worries me, for it means there are too many people leading shallow or empty lives. And as I watch anxiety increase I wonder why all the emphasis is placed upon such material things as commercialization, industrialization, mechanization, urbanization, and all the rest.

What happened to the good, old-fashioned principle of the Golden Rule? Is there really any reason why a modern society cannot follow basic rules of wise conduct even in the age of the atom, automation and the automobile?

My conclusion is: We not only can but we must. This is the time for idealism. It is the time to return to our religious ideals, patriotic ideals, ethical and moral standards. It is time to ease our society's anxieties and to lighten our daily burdens.

I firmly believe that every man and woman would lead a more satisfying life if each one would give more emphasis in his daily living to love, honesty, truth, friendship, courtesy and faith—faith in God, faith in ourselves, faith in our fellowmen and faith in freedom.

No, idealism is not immature or old-fashioned. It is applicable and necessary to modern life. As the well-known statesman and orator Carl Schurz said:

"Ideals are like stars; you will not succeed in touching them with your hands. But like the seafaring man on the desert of waters, you choose them as your guides, and following them you will reach your destiny."

Instead of considering idealism as a dim-witted, get-you-nowhere way of American life, I choose to believe that idealism—in medicine or anything else—is the only mature, sensible attitude for every citizen and every doctor. It is a sound, long-range approach that can lead to a good life and good medicine.

---

*Delivered before the Mississippi State Medical Association Tuesday evening, 8 p.m., May 14, the Buena Vista Hotel, Biloxi, Mississippi.

As doctors of medicine we are devoted to our science and our art, and to the betterment of public health. Our profession from its beginning demanded that service was more important than self. Traditionally and in reality, the doctor has been mankind's finest servant.

But lately, I am beginning to wonder if some physicians haven't forgotten this ideal. Let me be specific.

Medical service does not mean office hours only from nine to five, five days a week. It means medical service at any time of the day or night. It means making house calls in the middle of the night, on Saturdays and on Sundays.

Some consider that an old-fashioned idea. I do not. Patients get sick at 2 A.M. just as they do at 2 P.M.—sometimes more often. They get sick on Saturdays and Sundays as well as on Tuesdays and Wednesdays. Again perhaps more often. But in any case, they want a doctor; they need their doctor, and they should be able to get him.

I know you cannot be a superman. There are limits to your endurance. And I recognize that some patients think the M.D. after a physician's name stands for "Midnight to Dawn."

On the other hand, there is a small segment within the profession that thinks M.D. stands for "Mid-morning to Dinner Hour."

I firmly believe that all of us can pattern ourselves to a certain extent after the ideal of the old country doctor. Certainly, let's keep our modern skills, techniques and knowledge, but let's also practice more of the humility and tender loving-care of the old-time practitioner. Let's make the doctor-patient relationship really mean something to our patients and to ourselves.

Another ideal of mine, not an old-fashioned one either, is that medicine is a calling not a business.

There are some persons—laymen and doctors—who disagree. They think medicine is definitely like a business or industry, and they believe medical care is just merchandise to be sold or a product to be run off on the assembly line. And in medicine, there are a few doctors who worry more about what is going into the cash box than what is being put out as medical care.

Medical care is not merchandise. It is a service and, consequently, it cannot be mass produced by assembly-line methods.

Nor can there be any grading of medical care by the physician. As a provider of a service, the doctor cannot ask the patient what quality care he wants—good, choice or prime. All physicians must give only the best . . . the most excellent care. Nothing less should be good enough; nothing less can be considered good medical performance.

I believe that the man or woman who accepts the call of medicine has to put a great many things in his heart as well as in his head. From the beginning he must feel that his sole purpose in medicine is to help people. He cannot enter the profession just to make a living. It is only the dedicated physician who can practice year after year without forsaking the profession's high ideals and principles.

In the calling of medicine it is difficult at times to measure our professional success. We cannot count the number of refrigerators sold, the number of houses built or the number of television sets repaired. If we try to rate ourselves by the number of patients seen, babies delivered or operations performed, we run into trouble.

What good, for example, would it be to see a great many patients in a day, but fail to give enough time to each one and fail to understand the real problems of each patient? Or suppose we spend an entire day with one patient at the hospital or in the home. Is that day to be considered an unproductive one?

Of course, the worst indicator of medical success by far is the daily cash intake. While every doctor needs an adequate income, he does his patients, himself and his profession an injustice by measuring his medical success in terms of dollars. Each of us must be concerned to some extent with money, I know, but when this self-concern begins to overshadow service, there is bound to be less emphasis on the quality of medical care.

So if we are going to be guided by the principle of service to mankind, we cannot allow self-interests to block our path.

Just as the physician must have an inner agreement with himself as to how he will practice in his medical calling, so he must have a religious ideal. He must have faith in Power greater than all the instruments of science at his command. As Bishop Sheen has said, medicine is a profession that deals with God's noblest creatures. How then can any physician enter into the great calling of medicine without reverence for life and for the dignity of man? How can he practice without certain spiritual convictions?

All of us have experienced the feeling of being close to the great Power, especially when a human life is in our hands. All of us have recognized the need too for faith and hope on the part of a patient in a crisis. And I would venture to say that all of us have called upon the Supreme Power to help when we have done everything possible and it still was not enough.

I personally do not consider it old-fashioned to seek aid beyond that of medical science. It is not unrealistic to have spiritual ideals in medicine, or in any other walk of life. I sincerely believe the professional man who walks with his God enriches his own life and those he serves.

There are any number of ideals that can be considered golden rules of life, but one of the most vital today, or any other time, is the virtue of honesty.

It would be unfair to single out any one group as more dishonest than another. Likewise, it would be unfair to call one group more honest than another. But it does seem that the virtue of honesty is having its troubles in society today. Occasional cheating or a little deviation from the ideal may not be condoned by everyone but too often it is acceptable in many circles.

I'm old-fashioned enough to believe that little wrongful acts are just as dishonest as the larger ones. I am old-fashioned enough, too, to believe that dishonest acts in every sphere of our society can be just as dishonest and as detrimental to our good life as those at only the top levels. And I am old-fashioned enough to believe that the undetected dishonesty is just as wrong as the discovered sin.

I think it would be correct to say that each of us—no matter what our role in society—knows how he is expected to behave. Why then should there be any reason to act otherwise? I wonder how long our society, or a group, would last if everyone suddenly were to engage in small dishonesties, small shady practices and small unethical policies.

In medicine, as in any other profession, business or trade, we can ill afford to have little malpractices or large ones. The dishonest few do great harm to the great honest majority and to a profession so highly associated with integrity. Whenever I have seen or heard of a dishonest medical practice, I cannot help think that the total damage to the profession is far greater than that actually done by the individual to himself.

I had no intention tonight of preaching a sermon, but it appears that I have. And as long as I am sermonizing, let me make one final plea to you and to all our colleagues. Keep organized medicine strong by maintaining our unity and our high purposes. Only in this way can we provide the medical leadership so necessary in our communities, in our states and in the nation. Remember, if we are divided, we will speak out in a score of voices and the result will be confusion and ineffective leadership, or no leadership at all.

EVERY WOMAN

WHO SUFFERS

IN THE

MENOPAUSE

DESERVES

"PREMARIN."®

widely used

natural, oral

estrogen

AYERST LABORATORIES
New York, N. Y. • Montreal, Canada
5645

Vaginal Bleeding in the Last Trimester of Pregnancy*

MICHAEL NEWTON, M.D., F.A.C.S.
University Medical Center
Jackson, Miss.

In February of this year I was conducting part III of the examinations in obstetrics and gynecology for the National Board of Medical Examiners. I asked the first candidate that I had how he would manage the following situation: A patient who was in the thirty-seventh week of her pregnancy, and who had had a normal antepartum course, called him at 7 o'clock at night and said that she had had a sudden gush of painless bleeding from the vagina amounting to about a cup full. He answered that he would reassure her, tell her to go to bed, avoid exertion and come in to see him at his office in the morning. It took me some time to get him to realize that if he did that he might be landed with a dead baby and a dead mother on his hands and incidentally it took some searching to discover questions that he was able to answer correctly.

This subject of vaginal bleeding in the last trimester is an extremely important one for the welfare of both mother and child. It is treated in most textbooks of obstetrics according to the various diseases which may cause it. In our practice, however, we are faced with a patient who states that she has already had some bleeding and we have to decide from there how much and why she is bleeding and what to do about it.

The first question which arises is what actually does constitute bleeding in the last trimester of pregnancy. A small amount of pink staining or even a small amount of actual bleeding commonly occurs prior to the onset of labor and this is known as the "bloody show." It is extremely difficult to determine the amount of bleeding even when you can actually see it at operation or on the delivery table let alone estimate it over the telephone at 7 o'clock at night. And here lies one of the greatest problems in this condition—has the bleeding been enough to justify investigation? It is impossible to answer this question categorically. Each case has to be treated on its merits. It is, however, better to be sure that there is no major problem than later to be confronted with an overwhelming hemorrhage. In general either dark or bright red bleeding in the last trimester of pregnancy which is of an amount to concern the patient should also be enough to concern her physician.

Given a patient who appears to be bleeding the next problem is to diagnose the cause of the bleeding. At this point it is well worthwhile to consider the various possibilities. It is commonly assumed that the two major causes of bleeding in the last trimester of pregnancy are placenta previa and abruptio placentae. While these are certainly the most important from the point of view of the survival of the mother and the infant and represent the conditions which are most to be feared in this situation, yet recent evidence indicates that they may not actually be the most common causes of such bleeding.

In two recent reports[1],[2] which analyze the causes of last trimester bleeding this complication occurred in about 5 per cent of all pregnancies. While placenta previa and abruptio placentae constitute 44 per cent and 20 per cent respectively of the total cases reported, rupture of the marginal sinus assumes considerable significance. This condition accounts for 34 per cent of the cases in both series.

Further evidence of the significance of rupture of the marginal sinus of the placenta was obtained from a study of the cases of vaginal bleeding encountered at the University Hospital during our first two months of operation in July and August of this year. Last trimester bleeding occurred in 9 or 15.7 per cent of 57 deliveries during this period. Even in this small series ruptured marginal sinus was responsible for one-third of the cases of bleeding. The high incidence of this type of complication may be accounted for by the facts that we were looking for trouble and that we were dealing with a high proportion of complicated obstetrical cases.

Rupture of the marginal sinus of the placenta has been known for a long time to be a cause of bleeding before and during labor and yet its importance has not been fully appreciated until recently. Recent studies[3] indicate that the maternal arterial supply to the placenta enters at the middle and the venous outflow leaves largely by the sinuses located at the edge of the placenta which are commonly called the marginal sinuses. The linings of these sinuses are thin and particularly liable to rupture. It should be noted that the blood lost when the marginal sinus ruptures is maternal blood and not fetal blood and that commonly the fetal circulation is not compromised. However, the amount of blood lost, while occasionally insignificant, may actually be considerable. Ferguson[2] estimated that five of his patients lost over 500 cc. of blood, 35 lost between 100 to 500 cc., and the remaining nine lost less than 100 cc. In our cases the amount of blood lost was less than 500 cc. but enough to cause the staff some concern.

---

*Presented before the Central Medical Society, October 1953, Jackson, Miss.

Placenta previa is probably the most important cause of vaginal bleeding in the last trimester of pregnancy and the one which most influences the methods used in diagnosis. It commonly occurs about once in 200 deliveries and the placenta may be either central, partial or low-lying. Schmitz[4] reported that 31.3 per cent of such placentas were of the central variety, 26.7 per cent of the partial variety, and 42 per cent of the low-lying type.

The danger of placenta previa is primarily that of hemorrhage. This hemorrhage may follow even a cautious vaginal or rectal examination and may be a very alarming circumstance. In general fetal mortality in placenta previa ranges from 15 to 40 per cent but maternal mortality while not high is still significant.

Abruptio placenta also occurs about once in 200 deliveries. In many instances it is mild and labor may proceed normally. On occasion, however, blood may extend throughout the whole wall of the uterus and give rise to what is commonly called the Couvelaire type of uterus. This in turn may lead to changes in the maternal blood resulting in its inability to clot. Finally anuria may be a serious complication. These problems are among the most difficult to deal with in obstetrics and are associated with an appreciable maternal mortality. Fetal loss in abruptio placentae ranges from 25 to 50 per cent more, depending upon the severity of the abruption. Another significant factor in abruption is its frequent association with toxemia and hypertension.

Cervicitis is not an inconsiderable cause of vaginal bleeding in the last trimester. Usually it is mild and does not threaten the life of mother or baby. Its significance lies in the fact that it can usually be detected upon examination with a speculum and that an unsuspected carcinoma may be present.

The next question is that of the diagnosis and management of the various conditions which may produce bleeding in the last trimester of pregnancy.

While most of the bleeding encountered is likely to be of the mild variety it is important to be sure that one is not dealing with a major problem that may threaten the life of mother and infant. The great danger is that severe hemorrhage may occur when the patient is in a situation where delivery cannot be conducted rapidly and the baby cannot be taken care of adequately.

Even a rectal examination in a patient with a central or partial placenta previa may produce severe hemorrhage. Therefore the first rule in the management of such patients should be:

1. Admission to hospital or clinic where adequate facilities are available. After admission the following procedures should be carried out:

2. The patient should have a complete examination. Signs of toxemia such as elevated blood pressure or albuminuria may be detected and may tend to support the diagnosis of abruptio placentae. Abdominal examination is important in that unusual presentations such as breech or transverse presentation are common in placenta previa. Eadie and Randall[5] found a breech presentation to be present in 8.3 per cent and a transverse presentation in 9.9 per cent of 131 patients with placenta previa. In the same series the presenting part was found to be high and freely floating in 57.2 per cent. The finding of such an unstable presenting part or of an unusual presentation may lend support to the diagnosis of placenta previa.

3. The patient's hemoglobin or hematocrit should be checked to estimate her general condition and correlate the amount of bleeding reported with that observed.

4. Suitable blood should be cross-matched and be readily available.

5. Only when these preparations have been made should the patient be examined rectally or vaginally. The preferable examination is a sterile vaginal examination performed in the delivery room with adequate facilities and equipment available for a rapid delivery if this should prove necessary. The vaginal examination consists of three basic procedures:

a) Visualization of the cervix with a speculum. This may serve to exclude cervicitis.

b) Palpation of the lower uterine segment by bringing the presenting part down against the vaginal fingers all around the cervix. If a boggy mass is palpable between the vaginal fingers and the presenting part this is suggestive evidence of placenta previa.

c) Insertion of a finger into the cervix. Caution should be observed in this maneuver if the baby is estimated to be of small size and if it is considered desirable to prolong the pregnancy, since this examination may produce alarming bleeding. However, when preparations are available for delivery and it is practical to go ahead with it, the gritty feel of a placenta which either completely or partially covers the internal os may be diagnostic.

6. If the examination as described above fails to disclose the cause of bleeding additional assistance may be obtained from soft tissue x-rays of the placenta. With a good technician and a good radiologist the placental site may be visualized in as many as 85 to 95 per cent of cases. Injection of radio-opaque materials such as sodium iodide into the bladder may on occasion serve to show the fetal head separated from the bladder by the placenta instead of being closely applied to it as is normally found.

The important thing in making the above examination is to attempt to arrive at a diagnosis. No clear decision as to treatment can be made unless this is done. It is possible by these measures to diagnose or exclude placenta previa in the majority of cases. Once the diagnosis has been established it is possible to make intelligent plans as to treatment in the individual case.

Placenta previa. It used to be accepted practice that rapid termination of pregnancy by whatever method seemed best was the right treatment. However, recently greater fetal salvage has been obtained by the use of conservative measures where bleeding occurs early in pregnancy. The initial bleeding from placenta previa is usually not severe and provided that the mother's condition is maintained by adequate transfusions and supportive measures the pregnancy may be carried on for a long enough period to ensure the fetus a greater chance of survival. When delivery of the infant seems indicated caesarean section is preferable in all instances of central placenta previa and probably for most cases of partial placenta previa. Where the placenta is marginal or lowlying and the patient's general condition is good, labor may in certain instances be allowed to proceed normally or may be induced by rupture of the membranes. In this situation it is important to bring the fetal head down against the bleeding edge of the placenta by fundal pressure or by the use of Willett's scalp traction forceps. Attempts to pack the vagina or uterus or perform Braxton-Hicks version are not advisable.

Cervicitis. If a diagnosis of cervicitis is made on speculum examination the possibility of carcinoma coexisting with the pregnancy must always be considered. Pregnancy itself is no contraindication to biopsy of the cervix. The risk of hemorrhage is slightly greater than in the non-pregnant patient. However, in a series of 300 biopsies during pregnancy Nesbitt and Hellman[6] showed that 93 per cent had no significant bleeding following this procedure.

Abruptio Placentae. If the abruption appears to be mild, if the general condition of the mother is satisfactory and the infant does not appear to be compromised, labor may be allowed to proceed either with or without stimulation by rupture of the membranes. There is considerable difference of opinion about the use of intravenous pitocin to stimulate labor in this situation but if it is used it should be used with great caution. In all cases of abruption constant observation of the patient is essential. Evidence of increased involvement of the uterus by extension of the hemorrhage or signs of fetal distress are indications for prompt delivery. If this cannot be performed vaginally caesarean section should be performed.

Rupture of the marginal sinus. This is frequently a diagnosis by exclusion when made before delivery. In Ferguson's series[2] the fetal mortality was no greater than that in a normal pregnancy. The only indication for action would seem to be the danger of excessive loss of maternal blood and this is a rare circumstance. Ferguson takes the point of view that it is advisable to forestall this by rupturing the membranes in order to get the patient delivered as soon as possible.

SUMMARY

Bleeding in the last trimester of pregnancy may be a serious occurrence for both mother and infant. Rupture of the marginal sinus is a more common cause of this than has previously been supposed.

Significant bleeding in the last trimester of pregnancy calls for the establishment of a diagnosis. Rectal and vaginal examinations should not be performed unless the patient has been admitted to the hospital and preparations made for replacing blood and for delivery and resuscitation of the baby.

Once the diagnosis has been made treatment of the various conditions present must be individualized.

REFERENCES

1. Fish, J. S., Bartholomew, R. A., Colvin, E. D., and Grimes, W. H. The role of Marginal Sinus Rupture in Antenatal Hemorrhage. Am. J. Obst. & Gynec. 61:20, 1951.
2. Ferguson, J. H. Rupture of the Marginal Sinus of the Placenta. Am. J. Obst. & Gynec. 69:995, 1955.
3. Earn, A. A., and Nicholson, D. The Placental Circulation, Maternal and Fetal. Am. J. Obst. & Gynec. 63:1, 1952.
4. Schmitz, H. E., O'Dea, N. J., and Isaacs, J. H. Placenta Previa; a Survey at the Lewis Memorial Hospital. Am. J. Obst. & Gynec. 3:1, 1954.
5. Eadie, F. S., and Randall. J. H., Bleeding in Late Pregnancy; a Review of 131 Cases of Placenta Previa and 104 of Abruptio Placentae from 1926 to 1952. Am. J. Obst. & Gynec. 3:11, 1954.
6. Nesbitt, R. E. L., and Hellman, L. M. Histopathology and Cytology of the Cervix in Pregnancy. Surg. Gynec. & Obst. 94:1, 1952.

Retained Placenta*

C. M. DORROUGH, JR., M.D.
Ruleville, Mississippi

WITH MORTALITY figures being reduced in almost all fields of medicine it is only proper that more attention be paid to those entities whose mortality rates are lagging behind the general reduction. One of those entities is post-partum hemorrhage.

In the period between 1937-1945 there was a 30 per cent decline in the maternal deaths due to septicemia and 35 per cent decline in deaths due to toxemia, but during this same period there was only a 13 per cent decline in deaths due to post-partum hemorrhage, and a retained placental fragment is the most common cause of late puerperal bleeding.

In 1950 there were 1044 deaths in pregnant and recently delivered women in the United States. Another 418 died of infection and it is estimated that 50 per cent of these suffered excessive and unreplaced blood loss at delivery. This would then bring the total to 1253 deaths attributable to obstetrical hemorrhage.

Post-partum hemorrhage is for the most part due to lacerations of the birth canal and to conditions arising within the uterus and these conditions almost invariably involve the placenta. Some of the conditions within the uterine cavity which may give rise to hemorrhage are placenta accreta, placenta increta, atonic uterus, and deep anaesthesia.

There is not complete agreement among all authors as to the exact difference between a retained placenta and a prolonged third stage. Most men define a retained placenta as one that is not expelled within one hour following delivery of the child; others give two hours as the upper limit and DeLee says that a placenta that is not delivered within twenty minutes following the birth of the child can be classified as retained. The time is not important unless it is correlated with the condition of the patient. For instance, a patient who has lost a considerable amount of blood, is bleeding freely, and does not expel the placenta within twenty minutes, should be considered as having a retained placenta and subjected to manual removal. On the other hand, a patient who is not losing excessive amounts of blood and does not expel the placenta for over an hour following the child, has a prolonged third stage and not necessarily a retained placenta. Retained placenta, therefore, is a term more suited to clinical usage than to textbook dictum. Since there is no agreement on the definition of retained placenta there can be no accurate estimation of its incidence. However, it is reported to be around 1 per cent. This figure is deceiving since it is based on a definite time limit and excludes such dangerous entities as retention placental fragments and accessory placentas.

Following delivery of the child at the beginning of the third stage of labor, the operator reaches the point where more is expected of him and conditions are such that he can be of greatest service to his patient. By rapid, completely hemostatic repair of the episiotomy and thorough inspection of the placenta he can often preclude a dangerous hemorrhage.

Placental inspection is a most necessary part of every delivery and a part of that is often neglected. Through adequate inspection of the placenta, the physician may find a missing cotyledon from the maternal surface or an open blood vessel upon the fetal surface indicating a retained succenturiate lobe—either of these findings makes exploration of the uterine cavity mandatory.

Normally placental separation and expulsion occurs within a few minutes after the delivery of the child and radiologic evidence shows that separation usually occurs with the first or second post-partum contraction. Due to the marked decrease in area of the placental site, cleavage occurs at the weakest point which is the spongiosa layer. Since the peripheral portions are more adherent than the central areas, separation occurs in the central part first and gives rise to the retroplacental hematoma, which was once thought to cause placental separation. Failure of the placenta to separate completely is most often due to atony of the uterus which commonly follows prolonged labors and overdistension of the uterus by multiple births or polyhydramnios. Placenta accreta or placenta increta also cause failure to separate and must be recognized early in order to institute proper treatment.

When the placenta separates normally, it is forced into the lower uterine segment and expelled by the patient bearing down or by appropriate maneuvers on the part of the operator. Retention of a completely separated placenta may be caused by any obstruction to the birth canal such as neoplasms, a Bandles contraction ring, or a distended bladder.

---

*Read before the sixty-sixth semi-annual meeting of the Delta Medical Society, October 10, 1956, at Greenville, Miss.

When the placenta partially separates and cannot be expelled by appropriate external maneuvers, hemorrhage becomes excessive. The space occupied by the placenta prevents the uterine muscle from contracting sufficiently to compress the open blood sinuses. Oxytoxics should be withheld until the placenta is removed, for their use at this point would make manual extraction more difficult if not impossible.

Manual extraction of the placenta, if done early, aseptically, and carefully, has proved to be a benign and blood-saving procedure; and sometimes a life-saving procedure. Only through exploration of the uterine cavity can a diagnosis of placenta accreta and other conditions, which require hysterectomy, be made. It should always be done before resorting to hysterectomy for post-partum bleeding. The place to do it is in the delivery room and the time to do it is within the first hour after delivery.

In summary, a few statements will bear repetition.

1. Retention of placenta or placental fragments is a not infrequent cause of post-partum and late puerperal bleeding.
2. If the placenta fails to separate spontaneously it should be manually removed to prevent excessive blood loss.
3. Extraction should be prompt if bleeding becomes excessive.
4. Under no circumstances should a patient leave the delivery room with a retained placenta.
5. The placenta should always be carefully inspected.
6. Manual removal of the placenta is benign if done promptly, aseptically, and atraumatically.
7. Only through recognizing and properly treating these causes of hemorrhages can the morbidity and mortality of post-partum hemorrhage be reduced.

MILLION-DOLLAR SERVICE

Dr. Dwight H. Murray, to members of Mississippi Fifty-Year Club:

"The practice of medicine as we know it today and have it is due in my opinion very largely to the efforts of you men and women who have been in the practice of medicine 50 years or more. Without you, without your ideas, and without your very definite work and conviction of the right principles and purposes of medicine, we could not have medicine as we know it now. Doctor Nelson, I would think you are probably the youngest man around this table. This club could well charge you and men of your age with the responsibility of seeing that you pass on to the succeeding generations the same privileges you have been permitted to have. For that realization of all the things you have done community-wise in your church, schools, et cetera, which go to make good citizenship, we in medicine and the community generally can never repay. I feel a deep debt of gratitude to you men and women. I have made a little medical calculation. There have been issued one hundred thirty-seven 50-year certificates. That means 137 men and women have practiced medicine for 50 years or more here in your state. A very conservative figure as to you and your fellow doctor's donation to the cause of charity or wellbeing or of helping people would be $1,000 per year. In fact, that is an understatement. Each of you has contributed out of your work at least $50,000 worth of service to the people of your community. Multiply $50,000 by 137, and you get $6,850,000 that you 50-year people here in Mississippi have contributed to your communities and to your people. There are 66 members now living. Fifty thousand dollars times 66 gives $3,300,000 that the ones of you living have donated. Isn't that a challenge, Doctor Nelson, to the generation coming up? I get a little irritated when the young man of medicine says, what is in it for me to belong to the American Medical Association? I would like to give some of those fellows these figures, which would be a very conservative calculation."

Let us have faith that right makes might; and in that faith, let us, to the end, dare to do our duty as we understand it. —Lincoln

FRACTURE PROBLEMS

by Leslie V. Rush, M.D.

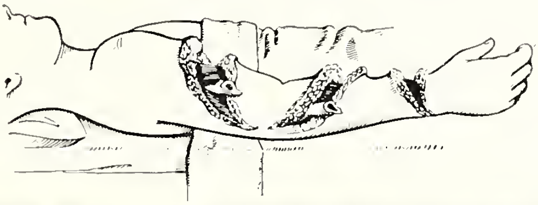
No. 1 of a series

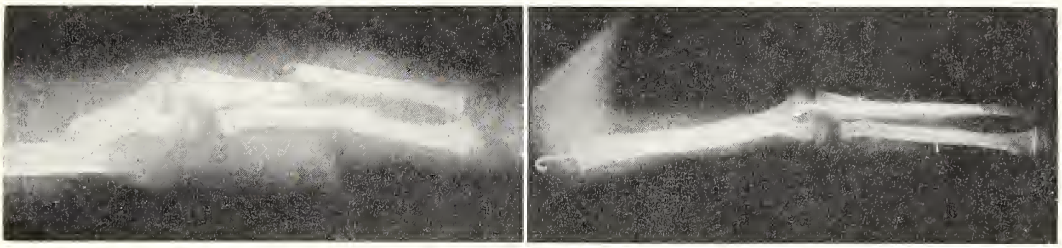
Open Fractures, Child

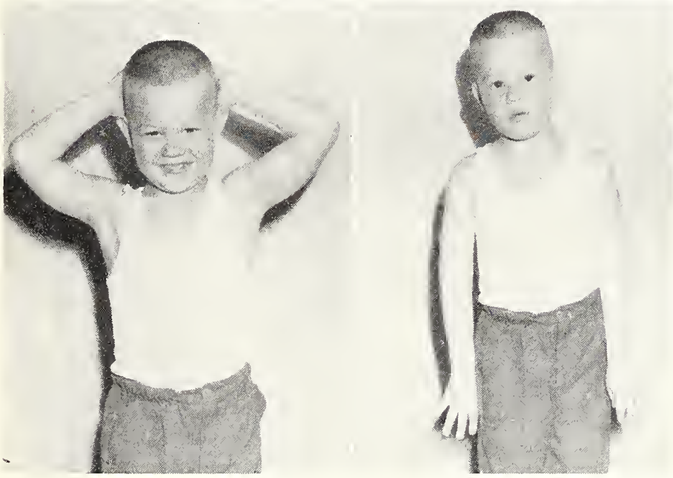
Compound fractures of humerus, radius and ulna in the child.

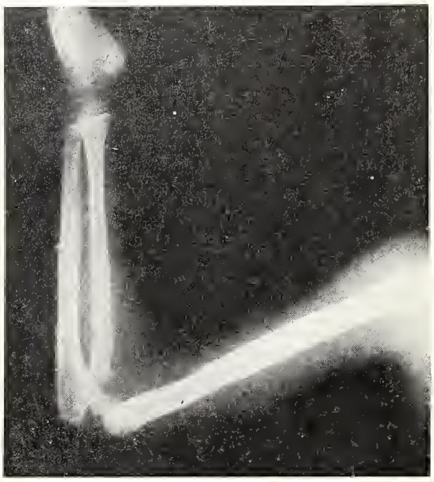
Male, age 4, treated by débridement, Rush pin fixation of humerus and ulna, KES dressing for 5 weeks.

At 2 months pin removed, full recovery without loss of function or deformity.









DISCUSSION:

Transfixing of an epiphysis in a child with intramedullary pinning is to be avoided when possible because of possible growth disturbance. In this case the procedure seemed completely justified because of the violence of the injury and the result obtained.

Check-up x-ray 18 months after the injury showed no alteration of the epiphyses.

Pinning in the child appears indicated in compound fractures, in fractures of the shaft of the femur, certain fractures about joints, particularly in the elbow region, or in other isolated cases where it is felt that a more satisfactory result can be obtained.

It should be remembered that in the shafts of long bones nature is very kind in the healing of the child, overcoming angulation and shortening to an unbelievable degree.

Femur Shaft

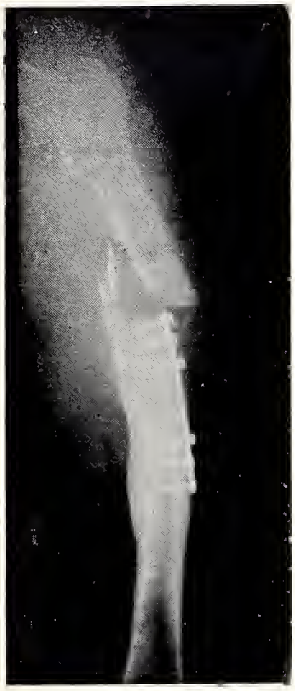


Fig. 1

Fig. 1: Fracture femur shaft, for third time, adult female. Pre-existing angulation, extensive occlusion medullary canal distal fragment. Severe foreign body reaction with hard, brittle bone. Thirteen years ago fracture of the shaft had been repaired elsewhere with incompatible metal, the screws apparently having been stainless steel and the plate vanadium steel. Marked corrosion and bony overgrowth. The screws could not be removed.

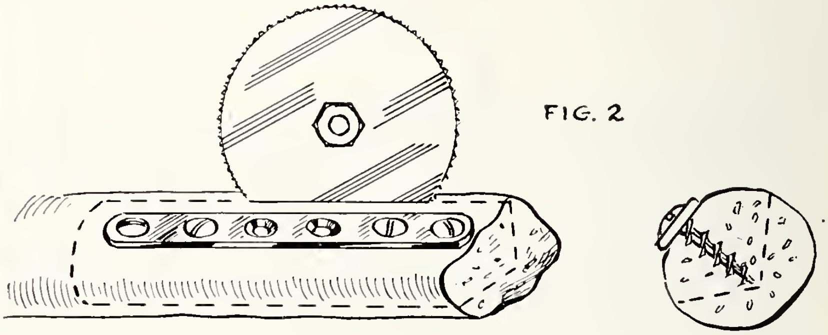


FIG. 2

Fig. 2: The bone block adjacent to the plate and screws excised with a motor saw and the block of bone preserved for later splinter grafts.

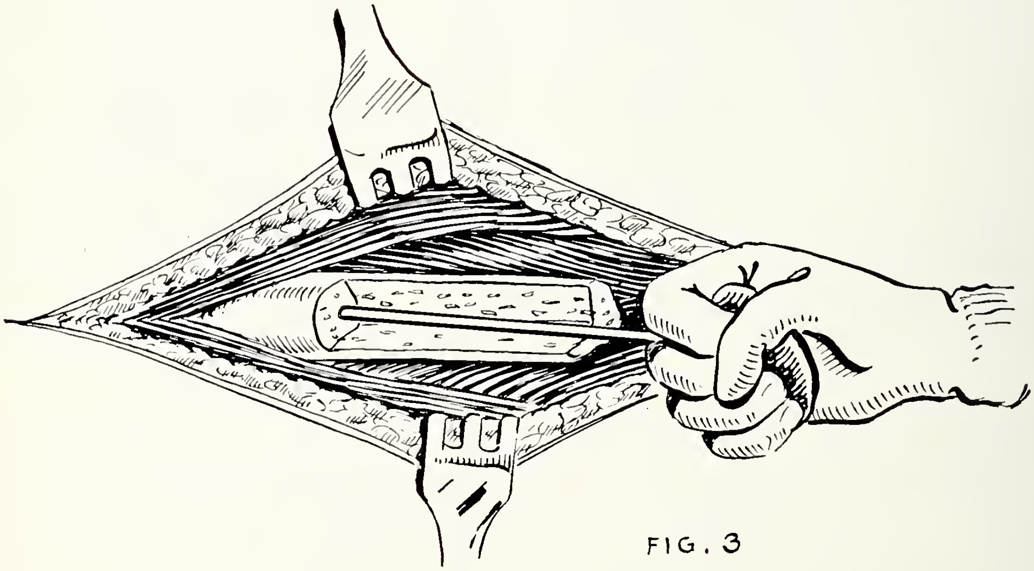


FIG. 3

Fig. 3: With the awl-reamer an axial opening was made to gain access to the distal medullary cavity.

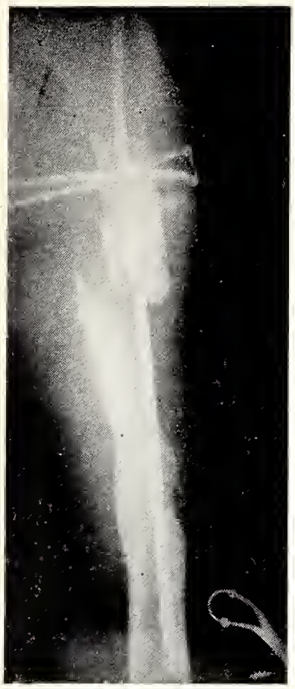


Fig. 4

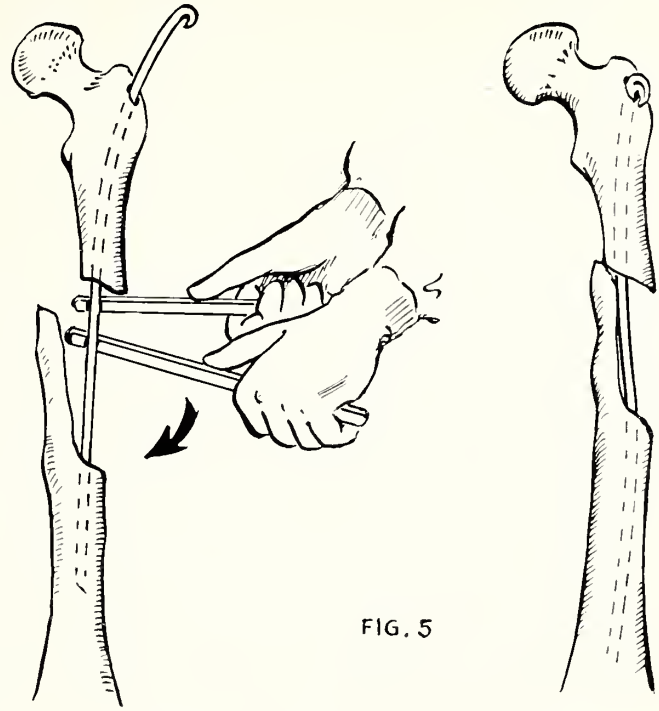


FIG. 5

Fig. 4: AP x-ray made in operating room. Intra-medullary pin, ¼ inch diameter, driven axially across fracture site produced wide distraction because of the pre-existing angulation of the bone.

Fig. 5: With the bending irons in the fracture opening the pin shaft was angulated laterally to compensate. When the pin was driven home the distraction was overcome and bone contact secured by re-establishing the pre-existing angulation of the femur.

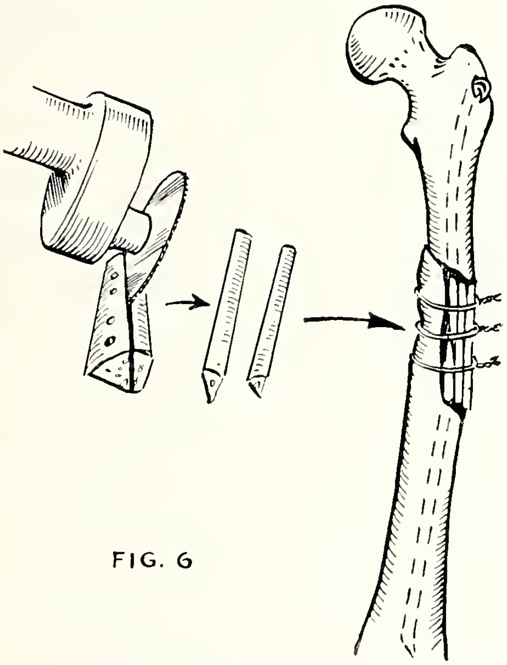


FIG. 6

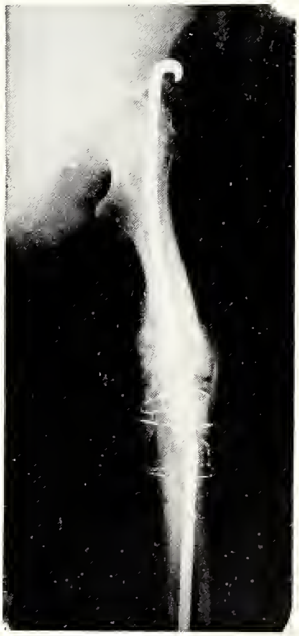


Fig. 7

Fig. 6: Splinter grafts secured from the bone block using the motor saw. Grafts fitted into the bone slot peripherally about the exposed shaft of the pin and fixed with encircling wires of type 316 stainless steel. No external immobilization.

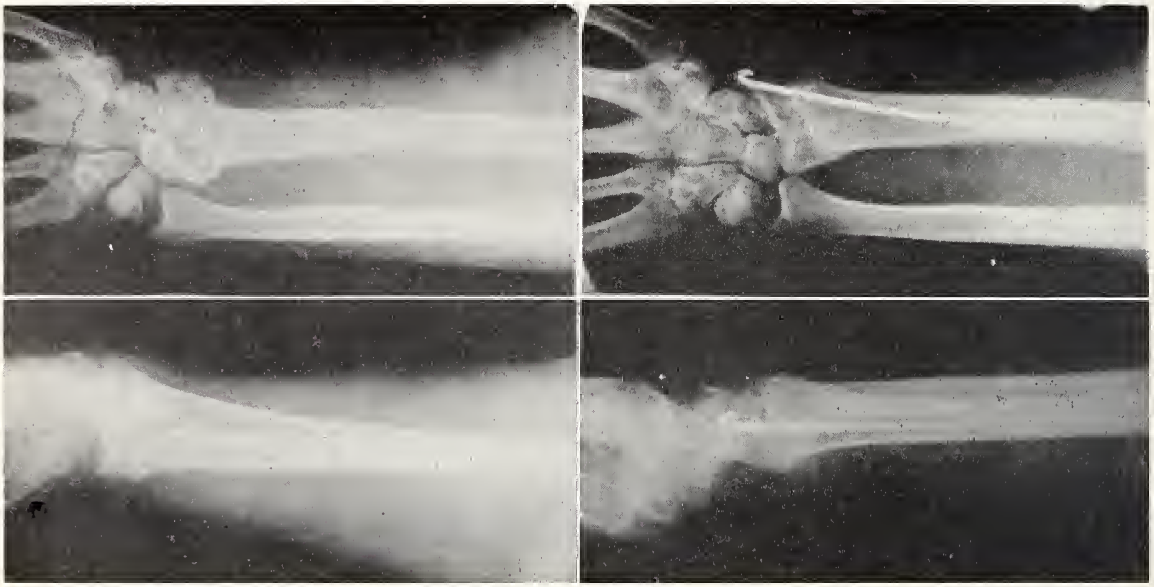
Fig. 7: Healing progressed satisfactorily. The pin was removed at 8 months before the callous became extremely hard for fear that it might have become impossible to remove the pin at a later date because of the sharp angulation of shaft of the pin within the bone.

Comminuted Colles'

Violent comminuted Colles'-type fracture dislocation of wrist.

Male, age 40, returned to his occupation as an upholsterer 3 months after injury. Treated by closed intramedullary pinning. Plaster splints removed weekly for exercise. After four weeks splints worn at night only for 2 weeks.

Five months post injury there was no clinical deformity, no swelling. Slight limitation of supination and of dorsal and palmar flexion persisted.



DISCUSSION:

When there is a sizeable styloid fragment most comminuted fractures of this region can be handled satisfactorily by closed intra-medullary pinning. Splints should be applied for at least two weeks with occasional exercise periods. Fixation is not stable by pin alone but can be maintained by well-molded removable plaster splints. Daily active motion in most cases can be safely begun three weeks post-injury.

Closed pinning is much more effective than open reduction. If the pin transfixes the styloid fragment at the proper angle the normal length of the styloid is maintained and the dynamic force of the pin plus the compression force of the soft tissue envelope and the well-molded splints reconstruct the fragments of the distal end of the radius which is forced snugly against the styloid end of the ulna.

INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW

JOSEPH P. MELVIN, Jr., M.D.	Cardiology
HARVEY F. GARRISON, Sr., M.D.	Pediatrics
JAMES D. HARDY, M.D., and STAFF, Department of Surgery, University Medical Center	Surgery

CARDIOLOGY

REHABILITATION FOR THE CARDIAC PATIENT

Herman K. Hellerstein, M.D., Amasa B. Ford, M.D.
Dept. of Medicine, Western Reserve University,
Cleveland, Ohio

(JMA Vol. 164 No. 3 — Page 225)

This article goes into great detail in setting up an orderly plan for the rehabilitation of the cardiac patient from the time that he is first struck down, through convalescence, to his return to the world of work. A team approach, involving the physician, psychiatric help, vocational guidance, social service investigation, occupational therapy, counsellors, and physical therapy may be employed, but it is emphasized that the physician is the guiding force throughout the total illness and treatment. This rehabilitation is defined as a process by which the patient is returned realistically to his greatest physical, mental, social, vocational and economic usefulness, and provides an opportunity for gainful employment in a competitive industrial world.

This article takes up in great detail the goals of rehabilitation and emphasizes that they are variable for each patient, some merely to leave the hospital, others to return to the world of society, and still others to return to competitive employment. Regardless of the goal, each patient is eligible for rehabilitation to his maximum attainment, and in about 80 per cent of the patients the private physician can manage the total rehabilitation. The other 20 per cent of the patients may need the team approach.

The sequence of events from the management of the onset of the acute illness through convalescence at home to a measurement of the cardiac reserve prior to the patient's return to work is outlined. The work adjustment phase is gone into in a good bit of detail, and explanation of certain problems, such as fatigue, working conditions, emotional factors of the job, etc. are gone into completely. The factors important to the rehabilitation of the patient would seem to include the nature and course of the heart disease, the emotional reaction, the iatrogenic disability, the vocational features of the job, and the presence of other diseases. In the management of such patients, the need to prevent iatrogenic disability and cardiac neurosis, and to expedite physical and emotional rehabilitation is most important. Measurement of the patient's functional capacity in physiologic and work measurement terms is valuable in regulation of the rate of rehabilitation, and in matching the patient's capacity with the demands of a specific job.

COMMENT

This is one of the best articles on cardiac rehabilitation that I have seen. The thing that interested me most was the section on measurement of cardiac reserve, in which it is stated that the energy cost of such basal activity as sitting or lying is about 1.25 calories per minute, and it is estimated that the endurance limit of regular daily work for a normal patient would average 5 calories per minute. It is of most importance to me that the majority of modern industrial jobs require average energy expenditure of about half that rate. A patient recovering from acute myocardial infarction, who is able to wash, shave and dress (approximately 3 calories per minute) and to walk around the block (6.6 calories per minute), is in all probability expending as much energy at home as he would at work. Recognition on the part of the physician of the high energy cost of such simple, ordinary activities should enable him to advise the patient to resume work without fear of overtaxing the patient's heart. Some average jobs, with their caloric expenditure, are the following: tool grinder (1.84 calories per minute on the average with a peak of 2.23 calories per minute), a lathe operator (average of 2.07 calories per minute, with a peak of 2.74 calories per minute), and janitor (average of 2.69 calories per minute with a peak of 4.29 calories per minute). It is extremely important to know that Class I cardiac patients can do 4 to 6.6 calories of work per minute; Class II, 2.7 to 4 calories per minute; and Class III, 2.7 calories per minute or less. Obviously most of our patients can return to industrial vocational activity.

PEDIATRICS

Conduct Disorders in Epileptic Children. F. Grunberg and C. A. Pond. J. Neurol. Neurosurg. and Psychiat. 20:65-68 (Feb.) 1957 (London).

Fifty-three epileptic children with behavior disorders were compared with 53 psychiatrically normal epileptic children in respect to organic, genetic, and social environmental factors. The 2 groups differed significantly as to their social environment. The epileptic children with behavior disorders had a more disturbed family background. The most disorders had a more disturbed family background. The most significant social environmental factors were a disturbed emotional material attitude towards the child and experiences by the child of breaks and changes in environment. When 35 epileptic children with behavior disorders were compared with 35 nonepileptic children with the same behavior problems, the same adverse social environmental factors were found in both groups. The disturbed family background associated with conduct disorders in childhood epilepsy, whether causal or not, must be dealt with by combined medical and child-guidance techniques.

COMMENT

The authors of this article have brought out some very important points for the consideration of all physicians who treat children. These same conditions apply to the normal child as well as the epileptic. Those of us who treat children come in contact with these problems almost daily even with normal children.

-Harvey F. Garrison, M.D.

SURGERY

HAZARDS AND SAFEGUARDS IN ADRENAL STEROID THERAPY: a Brief Survey of the Reported Complications

The advent of adrenal steroids as powerful therapeutic tools has been a boon to the medical profession, but certain undesirable side effects have occurred in connection with their use. It seems appropriate at this time, therefore, to pause and consider the nature and management of these side effects. Matters of particular pertinence are the metabolic processes involved, the clinical manifestations, and the safeguards which can be utilized to lessen these complications. It is important to emphasize the fact that most of the undesirable sequelae, excluding anaphylactic reactions and adrenal atrophy, result from an exaggeration of the normal physiological effects of the hormones. Also, fortunately, the complications usually subside promptly upon withdrawal of steroid therapy. Fatalities, when they do occur, are rare and can be prevented by employing certain precautions.

Today the steroids most commonly used are ACTH, cortisone, hydrocortisone, prednisone, and prednisolone. Numerous complications have been reported in the literature, but only the most common ones will be dealt with here.

Other complications that have been reported but which are controversial are retardation of wound healing, increased tendency to blood clotting and an increase in the incidence of congenital anomalies in babies whose mothers received steroid therapy during the first trimester of pregnancy.

Listed below are the affected metabolic processes, the ensuing clinical complications and suggested safeguards to be followed:

METABOLIC	CLINICAL COMPLICATIONS	SAFEGUARDS
1. Increased protein catabolism	Lean tissue wastage	Diet high in protein (200 gms) potassium (20 gms)
2. Derangement in fat metabolism	Truncal obesity and moonface	Prompt reduction on termination of steroid therapy
3. Abnormal carbohydrate metabolism	Hyperglycemia, glycosuria, and deranged glucose tolerance	A Nondiabetics. Check blood sugar levels B. Diabetics. Increase daily insulin
4. Derangements in salt and water metabolism	Retention of sodium, chloride, and water; excretion of potassium	A. Administration of daily KCL B. Restriction of Na C. Plasma electrolyte measurements D. Weight checks

5. Abnormal response to inflammation	Masking of infections or body catastrophes, *e. g.*, ruptured viscus	Careful clinical observation and proper utilization of antibiotics
6. Increase in gastric acidity and pepsin formation	Peptic ulcer perforation or hemorrhage	A. Avoidance, if possible, of steroid treatment in ulcer patients B. Antiacids
7. Derangement of bone metabolism	Osteoporosis and pathological fractures	A. Serial X-rays B. Prophylactic calcium and vitamin D therapy
8. Derangement of the nervous system	Psychological aberrations (euphoria, depression, and acute psychosis	A. Avoid steroid therapy in unstable individuals B. Careful observation for abnormal behavior

Adrenocortical atrophy is one side effect that should be considered separately. It is probably the most serious of the complications of steroid therapy. Atrophy results from the fact that the exogenous corticoids diminish the production of ACTH by the patient's own pituitary gland. In the event of stress, such as a serious infection or a surgical procedure, acute adrenocortical insufficiency may develop. Consequently, any patient who has received steroid therapy within from three to six months prior to contemplated surgery should be considered as a possible candidate for adrenocortical insufficiency following surgery. He should be given 100 mgm. of hydrocortisone intravenously each six hours during the first twenty-four hours postoperatively. This should be followed with ACTH intramuscularly (20 units every six hours) for several days to stimulate the atrophic adrenals. The signs of acute adrenocortical insufficiency following operation consist chiefly of a fall in blood pressure which does not respond to routine therapy, an elevated pulse rate and temperature curve, and mental disorientation. If such signs and symptoms develop and are not otherwise readily explainable, the possibility of acute adrenocortical insufficiency should be considered, and the patient treated accordingly.

In conclusion, the side effects of adrenal steroid therapy commonly represent an exaggeration of the usual physiologic potentialities. These can be kept to a minimum by judicious steroid usage and the employment of proper safeguards.

MISSISSIPPI PHYSICIANS ATTEND AMA

Physicians officially registered at 106th annual session, American Medical Association, June 3-7, 1957:

Drs. Lamar Arrington, Meridian; W. Winston Barnard, Clarksdale; A. V. Beacham, Magnolia; Herman F. Boswell, DeKalb; Ralph L. Brock, McComb; W. E. Caldwell, Baldwyn; J. P. Culpepper, Jr., and R. E. Schwartz, Hattiesburg; J. F. Eckford, Starkville; O. G. Eubanks, Crystal Springs; Alvin Fisher, Biloxi; Stanley A. Hill, Corinth; John F. Lucas, George J. Nassar, and Howard A. Nelson, Greenwood; T. A. Baines, C. W. Caccamise, Raymond F. Grenfell, Rush E. Netterville, Joseph Schor, S. L. Stephenson, James G. Thompson, George E. Twente, and William B. Wiener, all of Jackson.

MAKING HISTORY

Our four-year medical school has graduated its first class, twenty-four in number, in June. This class will make medical history for our state, for they are on the threshold of a new era in medicine. Our school already has a good name across the country. It will be a great factor in carrying the best in medicine to the four corners of the state. The central hospital affiliated with all others can help to raise the standard of practice throughout the state. It will aid research also and in time will be of great service in training interns and nurses. Our medical school needs the support of every citizen, every doctor, and every official of the state to enable it to do its best for all concerned.

MISSISSIPPI ACADEMY OF GENERAL PRACTICE

ASSEMBLY NEWS

Now is the time to make plans to attend the Ninth Annual Assembly of the Mississippi Academy at Hotel Heidelberg, September 18 and 19, 1957. Program Chairman Moncure Dabney has lined up an impressive array of scientific speakers.

On Wednesday, September 18, the program begins with a business meeting and election of officers. Following this, the scientific session will hear Dr. Floy Jack Moore, Professor of Psychiatry, University of Mississippi, Dr. James W. Headstream, Professor of Urology, University of Arkansas, and Dr. Leslie V. Dill, gynecologist from Georgetown University, Washington, D. C.

On Thursday, September 19, Dr. Headstream and Dr. Dill will speak again. The Assembly will also hear Dr. Ray O. Noojin, Professor of Dermatology, Medical College of Alabama, and Dr. John G. Young, Pediatrician from Southwestern Medical School, Dallas, Texas.

Luncheon speakers will be Chief Justice Harvey McGehee of the Mississippi Supreme Court and Major Frederick Sullens, Editor of the Jackson Daily News. Jimmie Arrington, newspaper editor and humorist from Collins, will speak at the banquet Wednesday evening.

RESIDENCIES APPROVED

General Practice residences at the University Hospital and Baptist Memorial Hospital in Jackson are now approved. At its June meeting, the residency review committee, representing AMA and the AAGP, gave its approval to these hospitals for two-year residency programs in general practice.

Activation of these programs triples the number of approved general practice residencies in the state. Previously, Mercy Hospital in Vicksburg was alone in this category.

Persons interested in one of these residencies should contact:

Dr. L. F. Rittelmeyer, Jr.
University Medical Center
Jackson, Mississippi
Administrator
Baptist Memorial Hospital
Jackson, Mississippi

NEWS BITS

Dr. A. K. McMillan, 73 years old Academy member from Lucedale, was honored by his fellow citizens on June 9 with an "Amon K. McMillan Day". We join the people of Lucedale in congratulating Dr. "Mac" on his 48 years of devoted service to the people of Mississippi.

More than 100 physicians attended the symposium on Diarrhea last month. Forty-three Academy members registered and besides enjoying an informative day of lectures and discussions, earned 5 hours of Category I credit. Those who attended were: Drs. S. A. Feurst, Vicksburg; Moncure Dabney, Crystal Springs; Albert Gore, Jackson; George Townsend, Forest; J. R. Cavett, Jr., Jackson; Hunter Scales, Starkville; C. P. Bass, Columbia; Minor Powell, Jr., Coldwater; Thomas G. Ross, Jackson; A. V. Beacham, Magnolia; L. F. Rittelmeyer, Jr., Jackson; J. H. Leigh, Philadelphia; John R. Bane, Jackson; E. E. Robinson, Meridian; A. L. Thaggard, Madden; F. L. Brantley, Madden; Mary E. Hogan, Glen Allen; Thomas M. Davis, Jackson; J. J. Kazar, Tchula; C. C. Brummett, Aberdeen; W. E. Moak, Richton; R. P. Hudson, Utica; R. G. Turnage, Kosciusko; J. M. Blount, Philadelphia; M. D. Berman, Jackson; W. C. Jones, Forest; John B. Howell, Canton; Lee H. Trapp, Monticello; Guy T. Vise, Meridian; Wm. E. Lotterhos, Jackson; C. D. Taylor, Jr., Pass Christian; D. W. McLean, Laurel; S. K. Johnson, Pelahatchie; J. D. Hutchins, New Hebron; W. O. Biggs, Osyka; James G. Blaine, Hazlehurst; W. T. Oakes, Ackerman; Robert T. Cates, Jackson; A. J. Messina, Vicksburg; E. D. Reynolds, Clinton; R. W. Crowell, Jackson; John C. Longest, State College; and Robert A. Davison, Memphis, Tennessee.

Louis F. Rittelmeyer, Jr., of Jackson, has been appointed civilian consultant to the Surgeon General, U. S. Army. Last month he inspected the general practice residency at Fort Knox, Kentucky.

President's Page

INDIGENT MEDICAL care has been a subject of deep and continuing concern on the part of the Mississippi State Medical Association. Our present policy position in this area really has two roots: The first is the self-assumed moral obligation of the physician to render service gratuitously to the genuinely indigent. It is important to realize that this obligation is voluntary assumed by ethical practitioners who subscribe to the *Principles of Medical Ethics* through membership in our state association and the American Medical Association.

The second root of our policy position has historical and socio-economic aspects. While there have been varied policy utterances on the economic side of indigent medical care throughout the 101-year history of our association, our present socio-economic position was determined in 1955 and continues as our official expression, substantially as originally stated. We have augmented this expression only to the extent necessary in pursuing expeditious, adequate implementation.

There is a need to preface all utterances on indigent medical care by stating emphatically that physicians in Mississippi have not been paid, are not now paid, and do not anticipate being paid for professional services rendered to the indigent. Thus, our concern is primarily that of adequate hospital care.

Generally, we believe that hospital care for the indigent must be improved and that payment for this care is a responsibility at community and state levels. We feel that direct participation by the federal government in this program is not indicated. We are concerned with improving the overall quality of medical care to the indigent and feel that our proposals will help achieve this end.

It became apparent to us several years ago that the charity hospital system in Mississippi is cumbersome, unwieldy, and outmoded. To be sure, there was a time when these institutions were highly necessary but the advent of the Hill-Burton hospital construction program has resulted in near-optimum distribution of adequate hospital facilities throughout the state. It is apparent that overall geographic distribution and proximity of hospital care to the individual bear a direct relationship to economic problems implicit in this area of service. We have, therefore, assumed the position that the remaining four charity hospitals should revert to a county-community operating basis with some degree of state assistance.

We feel that the State Hospital Commission program should be expanded in the Hill-Burton hospitals, especially in counties having charity institutions. Optimum usage of the University Teaching Hospital should be made. We recognize that the teaching hospital at the medical center is not intended for the long-term chronic or "nursing home" type of patient. Long-term care is impractical for fulfilling the mission of any teaching hospital and it must be understood that interest is centered in the patient needing a diagnosis and on whom therapy can be begun and returned to the hometown for continued treatment.

During the 89th Annual Session in May, we augmented these policy expressions by stating that unnecessary expense, if any, in the indigent medical care program should be eliminated and we have reaffirmed our belief that a better distribution of hospital care for the indigent can be realized through optimum use of the community or Hill-Burton hospitals.

We feel that true costs of caring for the indigent in our community hospitals must be determined through exhaustive study. We are not primarily concerned with usual computations of per diem cost per patient day; we are interested in knowing true costs incurred for indigent care over and above normal pay and part-pay patient loads. More adequate provision for meeting these realistic hospital costs must be made and present data tend to support the contention that the State Hospital Commission appropriation should be increased to meet this need.

The Mississippi State Medical Association feels that an exhaustive and comprehensive study of the overall indigent medical care picture in Mississippi should be made with a view toward reappraising our thinking and attitudes toward this needed service and discovering objectively action indicated within the framework of our state's financial capabilities.

Inherent in the successful operation of any realistic indigent care program is a mechanism for the determination of indigency. We frankly admit that we have no working definition but we contend vigorously that physicians should not and must not make final determination of indigency but only that each member of our profession continue the wise exercise of personal professional judgment in deciding whether or not an individual case merits the giving of his services.

Howard A. Nelson, M.D.
President

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $3.00.

Published monthly at 104 Hospitality Street, Booneville, Mississippi. Return postage guaranteed.

W. H. ANDERSON, M.D. .... Editor-in-Chief
MILDRED P. ANDERSON .... Assistant Editor

MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY

C. W. Patterson, M.D. ....President
Rosedale, Miss.
J. Max Roy, M.D. ....President-elect
Forrest City, Ark.
C. L. Chumley, M.D. ....Vice-President
Nashville, Tenn.
Lon E. Reed, M.D. ....Vice-President
Hot Springs, Ark.
R. B. Cunningham, M.D. ....Vice-President
Booneville, Miss.
Thurman Crawford, M.D. ....Secretary-Treasurer
Memphis, Tenn.

Mid-South Associate Editors

H. King Wade, M.D. ....Hot Springs, Ark.
R. L. Sanders, M.D. ....Memphis, Tenn.
Frank M. Acree, M.D. ....Greenville, Miss.

MISSISSIPPI STATE MEDICAL ASSOCIATION

Howard A. Nelson, M.D. ....Greenwood
President
Guy T. Vise, M.D. ....Meridian
President-elect
Geo. W. Twente, M.D. ....Jackson
Secretary
Rowland B. Kennedy ....Jackson
Executive Secretary

State Associate Editors

Louis F. Rittelmeyer, M.D. ....Meridian, Miss.
John T. Bryan, M.D. ....Meridian, Miss.

The Publication Committee is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.

Address all material for publication to W. H. Anderson, M.D., 104 Hospitality Street, Booneville, Mississippi.

§

THE NEED OF TODAY . . . .

Early in June, Dr. David B. Allman was inaugurated as the new president of the American Medical Association. His inaugural address bore an unusual title—"The Personality of Medicine." Its emphasis is on the fact that it is the responsibility of physicians today . . . to minister not only to the human body and its ills—but also to human hearts, minds and emotions."

Sympathy and understanding on the part of the doctor, in Dr. Allman's view, are just as important as scientific knowledge. He must blend science with art, and he must be both scientist and humanitarian—"He knows that all the scientific training in the world cannot dry up the milk of human kindness."

This is not easy, as Dr. Allman makes abundantly clear. The physician is—literally—fighting against the very secrets of life. He can postpone death but he cannot eliminate it. So he ". . . is constantly striving for a balance between personal, human values; scientific realities and the inevitability of God's will."

Dr. Allman believes that the doctor has the main responsibility in seeking to establish a warm and friendly relationship between the patient and himself. There must be all possible understanding and cooperation on both sides. Yet the doctor is always confronted with a hard fact—that sometimes he will be helpless, that there is nothing in medical science to prevent death or disability. Most doctors are dedicated men and when this happens the strain is heavy. But, Dr. Allman writes, he cannot brood and ". . . beat his head against the wall of what-might-have-been." The demands of his profession continue—the obligations to all his other patients are still there and must be kept uppermost in mind.

This indicates why Dr. Allman has found that the most difficult decisions a doctor makes are not on the scientific side of medicine. His training and experience tell him what to do in an emergency, what medicines to prescribe, whether to operate or not. So, "His most agonizing decisions lie in the field of human relations." Dr. Allman quotes from a journal left to the son of a doctor who himself died very young: "You will be blessed or cursed with an insight which few persons receive—the knowledge of length of life, of when and why . . . and worse, how . . . a person will die: painless or painful, fearless or fearful, weak or strong. Knowing these facts, you will have to decide how to tell a person or his family what is coming. Have you got the guts to do it? If not, get out now." And, Dr. Allman adds, "There are no textbooks, no rules of thumb, no easy yardsticks governing such matters of human heartbreak."

In closing his impressive talk, Dr. Allman warns against rigid ideologies or systems which bury individuals in the mass—and against "quack remedies" both in medicine and in public affairs. The need of today, as he sees it, is ". . . for a new revolution—a revolution against opportunism, expediency and materialism—a return to the original American ideals of freedom, personal responsibility, individual initiative and, above all, faith in God."

FRACTURE PROBLEMS

With this issue we offer the first of another series of fracture presentations by Dr. Leslie V. Rush of Meridian. This series he calls "Fracture Problems". Several months ago we ran his first, beautifully detailed and illustrated discussions of technics with the Rush pin, which was subsequently published in book form. Since then Dr. Rush traveled in Europe and a similar edition was published on the Continent in German.

Dr. Rush has attained a fine degree of success with intramedullary pinning in treating fractures. He has thoroughly demonstrated the value of the Rush pin, giving his findings to the profession with untiring effort, sparing neither time nor expense. Dr. Rush also has demonstrated that a general surgeon can at the same time excel in a specialty, and write a book on it as superbly well. Here in what we call a rural state he has done a monumental piece of work.

Dr. Rush's father was notable in medicine, surgery, and in hospital administration. The training, the knowledge and the inspiration which Leslie received from him no doubt contributed to the vision and purposeful effort of the son. In his own right Leslie deserves the plaudits of a true benefactor of his fellowman, and an exemplary exponent of his profession. All of his work is characterized by patient, painstaking, perfectionist technics. His improved method of treating fractures offers a clean, direct way to cope with one of our nation's most difficult problems—accidents. Orthopedic surgery is important in every part of our land.

In addition to a fine surgical skill and technical demonstration of a vehicle of his own fashioning for superior orthopedic results, Dr. Rush displays as fine traits in a personal way. Always kindly, courteous, and dedicated to duty, he leaves a nobler imprint for American medicine with every contact with the profession and lay public.

INSURANCE TO COVER DOCTOR'S OFFICE?

At the quarterly session of the Northeast Medical Society, held in Tupelo on June 11, there was free and general discussion of trends and problems in socio-economic medicine. President Webb urged more doctor-participation in the meetings of the state hospital association as well as the state medical association. Discussion centered around voluntary insurance. With an increasing demand that minor surgery and emergency traumatic surgery be done and paid for through the doctor's office, it seems plausible that an extension of insurance benefits to cover office surgery would be beneficial to patient, doctor, and insurance company.

Voluntary insurance is undoubtedly the individul patient's best defense in meeting the cost of medical care. Blue Cross-Blue Shield have served well, but with adjustment and extension of benefits to the doctor's office, the sick patient might be served faster and with less expense. Consideration for the patient should be of prime accounting in any cooperative plan.

EXHIBIT TO SMA

You will recall that Dr. J. T. Davis of Corinth won first place with his scientific exhibit on surgery of the hand at our state meeting. His exhibit has been accepted by the Southern Medical to be held at Miami Beach in November. Surgery of the hand is very important and continues to become more and more so as traumatic surgery grows in importance in the field of surgery. We congratulate Dr. Davis.

LELAND OPENS NEW HOSPITAL

The citizenry of Leland are to be congratulated upon the opening of the new Leland City Hospital on Sunday, June 30. Leland is one of the outstanding little cities of the Delta. It boasts a progressive people with vision and courage. It is good to see so many fine hospitals in the great Delta section of our state. The rich soil of the Delta not only produces cotton and corn and beans and cattle, but it produces fine men and fine doctors. The doctors of Leland will make good use of their new hospital. Leland was the home of Dr. J. S. Sanders who was among the first to become a member of the Fifty Year Club. He was an able practitioner, active in organized medicine, and well known in political circles. Dr. Thomas L. Dobson of Leland was also a member of the Fifty Year Club who rendered good medical service in this city. They no doubt contributed to the vision which enabled the community to realize this new hospital facility.

AMITE-WILKINSON COUNTIES SOCIETY

On June 11 the quarterly meeting of the Amite-Wilkinson Medical Society was held at the Field Memorial Community Hospital at 7:30 p.m. A delicious dinner was served by Miss Mary Bowls and her nursing staff. All the doctors were accompanied by their wives as guests. A very interesting program was rendered by Dr. Sidney Graves of Natchez, Mississippi, on ureteral calculi. Dr. Graves was accompanied by Dr. Jack Phillips. orthopedic surgeon from Natchez. Other visiting guests were Dr. and Mrs. Paul Jackson from Clinton, Louisiana.

FOR SALE

One 200 MA 110KV Westinghouse x-ray unit with motor driven table and fully automatic control. Slightly used. Perfect condition. Write or call Dr. Omar Simmons, Newton, Miss. 3t

PSYCHIATRISTS WANTED — Full-time staff of recently constructed Haun-type NP Veterans Hospital, affiliated in psychiatric residency training program, Jefferson Barracks, Missouri, 12 miles from downtown St. Louis. Salary $7570 to $12,685 depending upon qualifications. 25 per cent additional salary (up to $13,760) if board certified. Must be U. S. citizen, physically qualified and licensed. Write Manager, VA Hospital, Jefferson Barracks, 23, Missouri.

Deaths

IN MEMORIAM

Dr. Henry L. Lewis
Street, Miss.

There are times when the passing of a citizen from a community is felt as a personal loss by every man, woman, and child in its environs.

This tribute and respect comes only to those who have rendered outstanding services to their community and fellowmen.

So it is with Doctor Henry L. Lewis, of Street, Mississippi, who literally worked until the setting of the sun, leaving his service to his people only when he could no longer leave his chair or room.

For over half a century he was a member of organized medicine and served well his community ministering to the sick and injured in such skillful and faithful manner that he endeared himself to multiplied hundreds who sought his services.

Always interested in the betterment of his community, both from the standpoint of religion and education, he was most active in supporting the church and the school and both owe much to his untiring energy.

Doctor Lewis was universally admired by his fellowmen, both professional and otherwise, for his fidelity and integrity, his cheerful, friendly nature, and his Christian attributes, that his passing occasioned a widespread feeling of distinct loss and sorrow to his society and community.

It is not our purpose to write a eulogy for our friend and colleague, for it would be superfluous. His eulogy is written in the hearts and memories of those whom he served for long, unselfishly, and well.

Truly he "fought a good fight and kept the faith" not only to his God but to his profession and fellowman as well.

It is the sincere wish of the Amite-Wilkinson Medical Society that this note of respect and sympathy be recorded in the permanent records of this society and a copy be sent also to the family of Doctor Lewis.

DR. R. W. GRIFFITH, JR.

Returning home from two years of overseas duty, Lieut. R. W. Griffith, Jr., was killed in an automobile accident May 9 near Newton, Miss.

The Griffith family was on its way to Jackson. Griffith's father is Assistant Superintendent of the State Department of Education.

Lt. Griffith was a graduate of Millsaps College, and the University of Mississippi and Cornell University, and trained at Kings County Hospital in Brooklyn, N. Y., and at Baptist Hospital in Jackson.

Dr. Griffith, who was thirty years old, had practiced in Pontotoc prior to his service in the Army.

Survivors include his wife and two children, his parents, and a sister.

DR. JOHN C. BUTLER

Death called on May 8 for Dr. John C. Butler, 79, who before his retirement three years ago practiced for a span of 35 years in Biloxi.

In failing health for the past three years, he had been in a critical condition since March.

Born January 20, 1878, at Zachary, La., Dr. Butler was a graduate of the University of Tennessee School of Medicine, class of 1904, and practiced his profession more than 50 years before retiring. The University presented him with the 50 Year Medical Award two years ago.

Before opening his offices in downtown Laurel more than 35 years ago, Dr. Butler practiced in other areas, including Moselle. His wife was Mary E. Graves, daughter of the late Mr. and Mrs. Ben Graves, prominently known pioneer Jones County citizens.

Dr. Butler was a member of First Baptist Church and a Mason, with membership in the Laurel Masonic Lodge. He was an overseas veteran of the first World War and a member of the American Legion.

A staunch supporter of all projects for the benefit of the community, he also had a keen interest in athletic sports.

He leaves three sons, Graves Butler and Jack Butler, both of Laurel; and Rogers Butler, Portland, Oregon.

DR. NEIL M. FARBES

Death May 26 at a Birmingham, Ala., hospital claimed Dr. Neil M. Forbes, 40-year-old prominent physician and surgeon in Laurel.

Born in Oklahoma, Dr. Forbes came to Laurel with his parents in early childhood. He attended the Laurel Schools, graduated at Laurel High, then attended Louisiana State University. He attended the University of Tennessee Medical School.

A veteran of the late World War, Dr. Forbes was attached to the 40th Infantry Division as a Captain in the Medical Corps and served 3½ years in the South Pacific Theatre of Operations. He won the Silver Star military decoration.

Following the War, Dr. Forbes was associated with Dr. Ernest Holder at Masonite Hospital in Laurel. He later became associated with Dr. Max Golden at the Golden Clinic.

The Legitimate Role of Radiotherapy in the Treatment of Cancer*

JAMES E. LOFSTROM, M.D.†
Wayne State University College of Medicine
Detroit, Mich.

Somewhere in the vast area of cancer therapy a realistic approach must be made to the legitimate role of radiotherapy. It is too limiting to approach this from the point of view of only the physical application of ionizing radiation as generated mechanically or supplied from the various radio-active substances since so much is dependent upon the background, the philosophy, and the very personality of the radiotherapist who must administer such irradiation. There can be no restrictive definition of a radiologist in the area of cancer therapy. He must be, above all, a physician. As such he must be prepared to meet the varied challenges of the problem of total care of patients afflicted with neoplastic processes. There is no independent status for this physician, no point at which he can operate purely as a technician.

To elucidate further, the present-day radiotherapist must have a broad knowledge of biophysics and radiobiology so that he can properly employ the various modalities and energies in the treatment of this disease process in the proper time interval and dosage and at the specific point to produce optimum effect.

In addition he must be wise in the area of general medicine, for the disease and often the treatment affects the total body mechanism. He must have the judgment of a skilled surgeon, for he must appreciate the exact definition of destructive patterns and the limits to which he can go without irreversibly affecting normal structures. His knowledge of pathology and the life history of every type of cancer must be exact. Finally, he must know the specific nature of hormonal influences and the efficacy of chemotherapeutic agents. Integration in the application of the proper therapeutic agent at the most advantageous time is of the essence.

Accepting these criteria as reasonable requirements for a radiotherapist and assuming that he has available, directly or indirectly, all of the necessary agents or equipment, how can he best serve the cancer patient? First, the necessity for integration in the handling of the over-all therapeutic program as it relates to a specific patient must be emphasized. The primary form of therapy may be surgical, but the radiotherapist can handle subsequent treatment more adequately if he has seen the original nature of the lesion, its growth characteristics, its anatomical demarcation and the general status of the patient. Such coordination and cooperation on the part of various physicians responsible for a particular case can aid the one most important person, the patient.

So first and foremost the fact is established that the radiotherapist must serve as a closely integrated member of a therapeutic team.

At this point it would be well to enumerate the various modalities that may be utilized by the radiotherapist in modern-day treatment. For the sake of brevity and clarity they are presented in outline form.

I. *Externally applied irradiation*

a. Contact x-ray therapy	50 KV
b. Superficial x-ray therapy	80-150 KV
c. Deep x-ray therapy	150-400 KV
d. Supervoltage x-ray	1-3 MEV
e. Cobalt^{60} teletherapy	1-3 MEV
f. Betatron x-ray electron	15-36 MEV
g. Linear accelerator x-ray electron	10-100 MEV
h. Cyclotron neutron proton	300 MEV

II. *Interstitial, Intracavitary or Internally Administered (Plaques, needles, wire, beads, seeds, and colloid or solution)*

  a. Contact x-ray therapy.
  b. Radium
  c. Radon
  d. Cobalt^{60}
  e. Cesium^{137}
  f. Strontium^{90}
  g. Gold^{198}
  h. Phosphorus^{32}
  i. Iodine^{131}
  j. Yttrium^{90}

---

*Presented before the sixty-eighth annual session of the Mid-South Postgraduate Medical Assembly, Memphis, Tennessee, February 12-15, 1957.

†A portion of this work aided by a grant from the Atomic Energy Commission.

The consideration of the more specific nature of the role of radiotherapy in the treatment of cancer becomes difficult because of the very breadth of the generally accepted application of ionizing radiation in the treatment of this disease entity. In this brief presentation a broad basis of general experience is assumed and the effort is made to emphasize the role of radiotherapy in areas where differences of opinion seem to exist or in circumstances where its value may be totally overlooked or unappreciated. For the sake of simplification the material is broken down into broad categories.

I. SUPERFICIAL ACCESSIBLE CARCINOMA

It would be ridiculous to contend with a surgeon regarding the relative merits of the two modalities (surgery and radiotherapy) in the instance of a lesion that can be biopsied in toto without cosmetic complication. But should that lesion be situated in an area where even minor loss of tissue may result in disfigurement, such as ectropion of the lid, narrowing of the mouth, or loss of an ear or might require reconstructive surgery, then I would seriously contend in favor of the use of radiotherapy, whether it be radium or x-ray.

2. INTRACRANIAL AND INTRASPINAL

In general, there is no doubt that surgical extirpation is essential for the cure of almost all brain and cord tumors with the exception of medulloblastomas (a very radiosensitive lesion). Most often, however, it is not possible to remove all vestige of such tumors and radiotherapy can be employed to excellent advantage. It is recognized that astrocytoma grade IV is a relatively radiosensitive lesion and there is no question as to the merits of postoperative irradiation. There are, however, the less sensitive tumors, such as meningioma, craniopharyngioma and pituitary adenoma where postoperative recurrence is fairly frequent. Well-localized irradiation may be of considerable value in eliminating recurrences or in depressing further growth to prevent such sequelae as blindness or other focal changes. With the modern modalities of supervoltage and cobalt telegraphy, higher tumor dose may be accomplished without permanent loss of hair and other objectionable side effects.

Retreatment by these modalities also becomes feasible because of the skin-sparing quality of the radiation. Also, recent work carried out by McCombs and Lawrence[1] indicates that proton beam therapy may be utilized effectively to produce complete ablation of the pituitary.

The treatment of metastatic carcinoma of the brain from lung or breast may be treated to advantage if the lesion can be well localized. Our experience using cobalt 60 teletherapy in this situation has been most encouraging in producing good palliation. (Fig. 1)

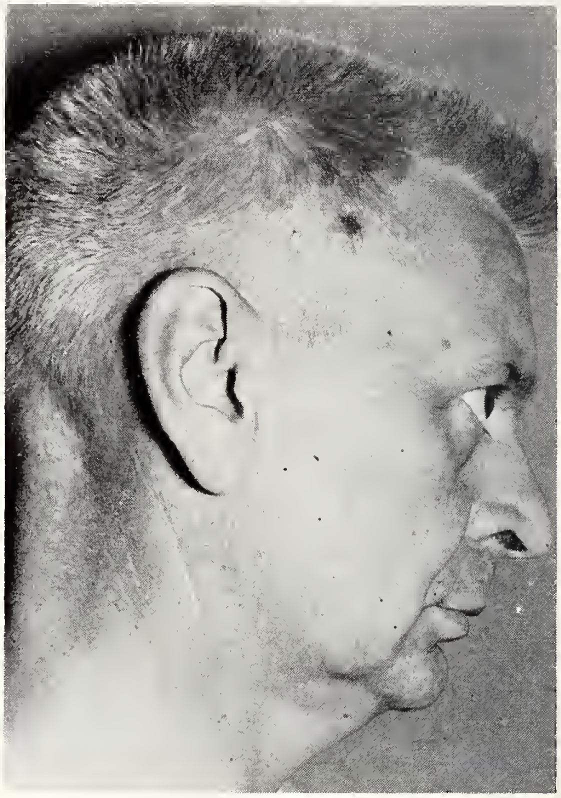


Fig. 1. Patient with metastatic carcinoma of the brain from primary bronchogenic. Photo made at completion of therapy. Note: minimal loss of hair. Attacks of unconsciousness and hemiparesis. Able to work.

3. HEAD AND NECK

This includes all such lesions as carcinoma, lymphoepithelioma, and lymphoblastoma of the paranasal sinuses, nasopharynx, oral cavity, oropharynx, hypopharynx and larynx. Local surgical removal of a small lesion on the mobile portion of the tongue and a similar approach to well-differentiated lesions of the intrinsic larynx would represent, in general, the only exceptions that I would make to the use of radiotherapy in these cases.

In treating carcinoma of the antrum, combined surgical and radiotherapeutic measures are required. Usually this is accomplished by surgical extirpation, followed by well-placed intracavitary radium and added external x-ray.

It is recognized that most otorhinolaryngologists will not accept my approach to the intrinsic larynx problem. There is a high percentage of cure obtained by total laryngectomy. The results from radiotherapy are reported as being equally good by some (85%)[2]. But even were the results slightly less satisfactory on the basis of five-year cures, I would still recommend for your consideration the employment of radiotherapy to permit the maintenance of reasonably normal voice. With careful follow-up, recurrence may be detected early and surgical intervention can still be accomplished at that time without prejudice to the patient.

Many of the lesions in the general category of head and neck cancer must be treated by combined methods of radiotherapy including both external radiation and interstitial radon, radium or radiogold seeds.

The problem of metastatic lymph nodes in the cervical area in association with lesions of the head and neck is one of the most difficult therapeutic problems. Radical neck dissection in our experience has been successful chiefly in those patients in whom the metastatic process is of rather limited extent. In the more extensive metastatic lesions, neck dissection is frequently complicated by recurrence and at this time irradiation therapy is very difficult to accomplish due to the fact that a satisfactory tumor bed has been destroyed, and the response to irradiation is not as good as it might have been before surgery. We, therefore, feel that irradiation should be employed in all cases in which there is a large metastatic process present, this to be followed by careful observation. A point may then be reached where a radical neck dissection can more satisfactorily be accomplished. However, in most instances the conservative approach is more valid with careful follow-up being carried out. It might be added parenthetically that we do not employ prophylactic cervical irradiation in the treatment of any of these conditions.

4. BREAST

Many volumes have been written about the proper therapeutic approach to the various types of neoplastic involvement of the breast, and the frequency of changed concepts is indicative of the fact that there is no ideal solution to this very grave problem. McWhirter[3] has expounded the virtues of simple mastectomy followed by postoperative irradiation, and his results are comparable to many series where radical surgery has been employed. There are a few radiotherapists and surgeons in this country who follow this procedure. In contrast to this there are the surgical enthusiasts who believe that every breast lesion should be treated with super-radical surgery in an attempt to eradicate the disease process not only in its primary site but in any of the potential drainage areas. This vigorous attack has not significantly influenced the number of 10-year survivals. It would be our feeling that a middle-of-the-road approach can be made in the treatment of breast carcinoma which appears to be limited to the breast and axillary drainage trunks. Radical mastectomy followed by adequate radiotherapy delivered to the internal mammary, supraclavicular and axillary regions will considerably enhance the patient's prospect of cure. When the lesion has progressed beyond this point and either the local lesion is extensive with fixation or ulceration, or when the disease process is known to have metastasized to distant areas, then the problem becomes more complex. Radiotherapy can still be employed to distinct advantage in treatment of the local tumor site, the regional lymphatics, or distant metastases. This must be carried out with full knowledge of the over-all programming necessary in the proper handling of such a patient. Hormonal therapy, chemotherapy, adrenalectomy, hypophysectomy, and radiotherapy each have their place. In probably no other instance is the integration of total effort more necessary if any element of success is to be gained. The value of radio-isotope therapy in the form of radiogold or radiophosphorous chromic phosphate in many instances as an adjuvant for the control of pleural effusion, and occasionally in the treatment of the generalized disease process should not be overlooked.

5. FEMALE GENERATIVE TRACT

There is a tremendous debate taking place throughout this country as to the merits of surgery alone in the handling of Stage I and II Carcinoma of the Cervix. We should all keep in mind the fact that some of our truly great surgeons are speaking on this subject from the point of view of research or evaluation and that they are working with a highly selected series of cases[4]. In most instances they are not being dogmatic. Many aids have now been provided the radiotherapist for more intelligent handling of carcinoma of the cervix by means of irradiation, especially the employment of the cytologic evaluation of radiation effect in the treatment of each individual lesion. These techniques have not been completely perfected to this point, however, they may aid in selecting those cases which are not going to respond to radiotherapy and in whom surgical intervention should be accomplished before the disease process has extended significantly. It is impressive to note the very definite improvement in results that occur when the radiotherapy of carcinoma of the cervix is carried out completely under the supervision of the radiotherapist. It is as impractical to assume that good therapy will result if a physician inserts radium of some ill-defined distribution and dosage and then refers the patient to a radiologist for external therapy, as it would be for one surgeon to partially remove the uterus, close the incision, and then refer the patient to another surgeon for completion of the job. Every step in the treatment of carcinoma of the cervix must be carefully measured with exactitude to extend the possibility of cure and to obviate the potentials of necrosis or residual disease.

In Stage III and IV cases, most certainly radiotherapy is the treatment of choice. Supervoltage or cobalt teletherapy now makes possible the retreatment of many patients who have had previous conventional x-ray without the danger of skin complications and with the potential of significantly palliating the patient. (Fig. 2 a, b, c).

Carcinoma of the ovary remains a problem for the combined efforts of surgeon and radiotherapist. If the primary tumor can be readily removed this should be accomplished followed by external irradiation to the entire abdomen and the employment of radio-active gold or chromic phosphate intraperitoneally to assist in control of the peritoneal implants. Many seemingly hopeless patients can be salvaged, especially those with papillary serous cystadenocarcinoma. We have found that in many instances it is possible to employ subsequent surgery for the removal of residual masses in the pelvic area following such a complete course of radiation therapy.

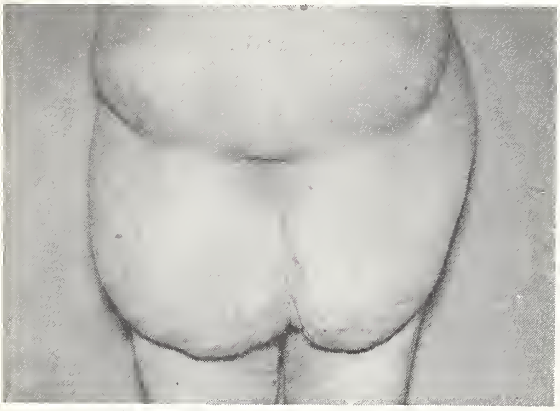


Fig. 2a. Frontal view of patient with tremendous panniculus with recurrent or persistent carcinoma of the uterus following conventional x-ray therapy.

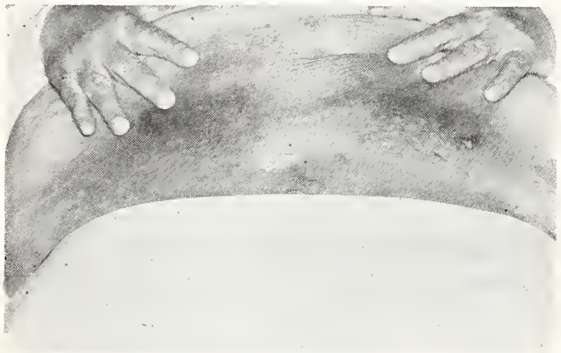


Fig. 2b. Condition of skin showing old post-irradiation changes under the panniculus.

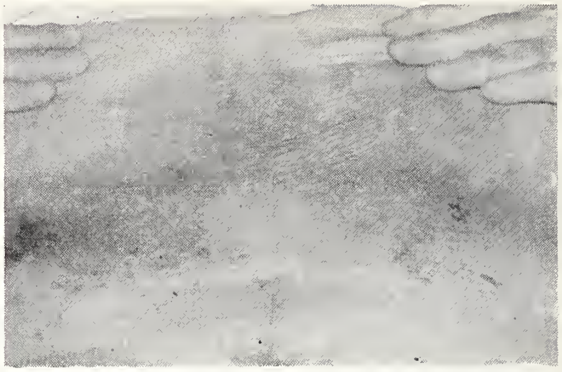


Fig. 2c. Condition of skin with only mild erythema and pigmentation following full dosage with cobalt 60 teletherapy (5000r tumor dose—6 weeks) demonstrates skin-sparing effect of supervoltage radiation under the worse possible conditions.

6. ESOPHAGUS

This is separated from the general category of gastro-intestinal lesions because of its separate and distinct characteristics, both as to histology and anatomical associations. The advent of rotational therapy and more recently the more general availability of supervoltage or Cobalt teletherapy have brought many patients suffering from carcinoma of the esophagus to the radiotherapist. Unfortunately the majority of these lesions is inoperable. In general we all recognize the merits of surgical removal in very local lesions in the middle third or of somewhat more extensive lesions of the lower third of the esophagus. Even in these instances the 5-year results are extremely disappointing. Now with the potential of delivering a more adequate radiation dosage to the tumor and the lack of associated complications within the lung, a great many of these patients are palliated to a remarkable degree by radiotherapy, resulting in the re-establishment of lumen and the ability to carry on normal life for a significant period of time. The primary disease area may well be sterilized in a fair percentage of cases, however, the long-range results are disappointing due to the fact that metastases have occurred below the level of the diaphragm, or to more distant areas as is similarly the case in many of the surgical failures. Nonetheless new hope for greater palliation is now available.

7. GASTRO-INTESTINAL TRACT

Attempts have been made over many years to treat by radiotherapeutic means the inoperable or recurrent lesions of the gastro-intestinal tract. Unfortunately the radiosensitivity of these tumors almost approximates that of normal structures and the attempt to apply adequate dosage was formerly complicated by severe skin reactions and radiation sickness, frequently more aggravating to the patient than the disease process itself. The results in palliative therapy utilizing supervoltage have been encouraging[5]. Tumor-bearing areas may occasionally be sterilized but more frequently growth is inhibited, bleeding controlled and, more significantly, pain relieved. This has been our experience in treating not only malignancy of the stomach, colon and rectum, but also of the pancreas and gall bladder. The side effects are of such minimal degree that palliation is real and many grateful patients result. (Fig. 3, 4).

Location	*No.*	*Average Dose*	*Number Palliated*	*Radiation Reactions*
Large Bowel	26	5000r/5 wks.	20	8
Stomach	9	5000r/6 wks.	5	4
Pancreas	6	5000r/6 wks.	2	1
Biliary	4	5000r/6 wks.	3	3
Total	45		30— 67%	16— 36%

Fig. 3. Analysis of 45 patients with inoperable carcinoma of the gastro-intestinal tract or recurrent lesions treated with cobalt 60 teletherapy indicating significant palliation in this difficult category. Radiation reactions are sufficiently minimal to make treatment of real value.

LARGE BOWEL CARCINOMA — 26 CASES

Pain as a presenting symptom: 20 cases—	77%
Relief of pain following CO^{60}: 15 cases—	75%

Fig. 4. Palliation of inoperable or recurrent carcinoma of the large bowel as relates to pain. Treated by cobalt 60 teletherapy.

8. LUNG

It is unfortunate that the surgical approach to the extirpation of carcinoma of the lung cannot be applied at a time when it has a chance of success. Unfortunately the majority of all bronchogenic carcinoma have reached the stage of inoperability before a diagnosis is rendered. This problem has been of special interest in our own clinic and we have attempted to evaluate the palliative response in patients treated by conventional 250 KV x-ray therapy and cobalt teletherapy. Results have indicated that there is a distinct improvement in the potential of palliation by utilization of the latter method of therapy regarding both subjective improvement and also objective evidence[6]. In addition, life has been extended to a greater degree, although admittedly not to the extent that we would wish to attain. A more detailed analysis of these results will shortly be published. (Fig. 5, 6).

BRONCHOGENIC CARCINOMA
100 Cases — Cobalt^{60}

Type	*No.*	*Avg. Age*	*Months Survival Following Treatment*	*Months Survival Following Diagnosis*	*Months Survival Following Symptoms*
Anaplastic	36	54.3	5.5 (6.2)	6.6 (7.7)	10.3 (11.9)
Squamous	35	54.9	7.3 (7.7)	9.8 (9.9)	12.3 (12.5)
Adeno-carcinoma	10	54.3	9.4	14.3	12.3
Undeterm'nid	19	61.0	7.0 (8.3)	8.7 (10.2)	14.5 (16.5)
		56.9	6.8 (7.5)	9.6 (10.4)	12.9 (13.9)

Fig. 5. Summary of 100 consecutive cases treated with cobalt 60 teletherapy. Many of these were advanced lesions with metastases. Survival time is indicated. Figures in parenthesis are survival time when discontinued cases were excluded.

Type	*Number*	*No. Palliated*	*% Palliated*
Anaplastic	36	14	39
Squamous	35	11	31
Adenocarcinoma	10	3	30
Undetermined	19	8	47
	100	36	

Fig. 6. Analysis of palliation based on subjective evidence (cough, pain, hemoptysis, general well being). If patients showing objective improvement but on whom there was no basis for subjective evaluation are included palliation is 55 per cent.

9. GENITO-URINARY TRACT

One of the really challenging problems in cancer therapy is that of carcinoma of the bladder. In this situation radiotherapy plays a most important part. This may take many and varied forms and again very close cooperation must exist between the urologist and radiotherapist if maximum benefit is to be obtained for the patient. Small local lesions may well be controlled by fulguration followed by trans-urethral application by radon seeds. In the more extensive lesions extirpation of the bladder with transplantation of the ureters has not proved too efficacious. The radiotherapist has been making every effort to meet the challenge and there has been significant improvement in the results of radiotherapy occasioned by improvement in the quality of external irradiation using supervoltage with or without rotation and the intracavitary application of ionizing radiation by means of radium, cobalt^{60} beads, and other point source radioactive substances[7].

We are also well aware of the quality of the work done by Flocks[8] and others in the treatment of carcinoma of the prostate by the interstitial injection of colloidal radiogold. This methodology has distinctly improved the potentials of cure and palliation.

10. LYMPHOMA AND LEUKEMIA

So much work is being done in the area of chemotherapy for control of these conditions that many physicians are beginning to overlook the potentials of irradiation. Suffice it to say that these are among the most radiosensitive of all tumors, and when radiation can be applied to local areas, response is dramatic and often-times longstanding. We all recognize the fact that there are many instances in which chemotherapy and radiotherapy may be used together or alternately to advantage in the control of the more extensive lymphomas. Radio-isotope therapy may at times aid materially in the handling of not only the leukemias but also the lymphomas. Only a coordinated effort will be successful in extending the life of these individuals.

CONCLUSION

In closing this admittedly sketchy presentation a direct plea is made to every practicing physician, be he generalist, surgeon, internist, or radiotherapist. Too frequently the patient with cancer unsuccessfully controlled at the time of primary therapy by any method is allowed to shift for himself and thus seek any promise of help. These are the individuals who are so frequently victimized by quackery. These are the patients who have a profound need for help. Their families are frequently equally harrassed. In pleading their case it is suggested to you that there are wide avenues of approach in the direction of palliation. The judicious use of chemotherapy, hormonal therapy, palliative surgical procedures (especially neurosurgery) together with intelligently applied radiotherapy, either directly by external means or by the use of radio-isotopes, can produce great comfort and reassurance. Physician, give generously of yourself and it is certain that you will be well rewarded.

BIBLIOGRAPHY

1. McCombs, R. K.: Proton irradiation of the pituitary and its metabolic effects. Radiol. In Press.
2. del Regato, J. A.: Symposium: Carcinoma of the larynx. III. Roentgen Therapy of Carcinoma of the endolarynx; Laryngoscope 61:511-516, 1951.
3. McWhirter, R.: The value of simple mastectomy and wide radiotherapy in the treatment of cancer of the breast, Brit. J. Radiol. 21: 599-610, 1948.
4. Meigs, J. V., Carcinoma of cervix—experience with surgical treatment, Ann. Surg. 137: 660-673, May, 1953.
5. Lofstrom, J. E.: Cobalt^{60} Teletherapy in the palliation of advanced gastro-intestinal carcinoma. Jour. Mich. State Med. Soc. In Press.
6. Lofstrom, J. E.: The radiotherapy of bronchogenic carcinoma. For publication.
7. Friedman, Milton: A new technique for the radium treatment of carcinoma of the bladder, Radiology, Vol. 53, No. 3, pp. 342-361. Sept. 1949.
8. Flocks, R. H.: Kerr, H. D., Elkins, H. B., and Culp, D. A., Treatment of carcinoma of prostate by interstitial radiation with radioactive gold (Au 198): follow-up report, J. Urol. 71: 628-633, May, 1954.

Cancer prevention is a hit-or-miss affair at best, even when environmental carcinogens are known and studiously avoided. Many investigators therefore feel that, beyond the taking of routine precautions and the elimination of body lesions that might ultimately become malignant, it is unrealistic at this stage of our knowledge to expect to control any major type of cancer simply by avoiding specific cancer inciters, much as this is to be desired. Periodic physical examinations and the surgical removal or medical cure of pre-cancerous conditions have, no doubt, prevented some cancers from developing, especially in such accessible sites as the breast, cervix, skin, and mouth. But in the over-all sense, there has been little or no prevention of deep-seated cancers.

This is especially true of lung cancer, which rarely presents any warning symptoms in terms of tissue damage that might become the foci of later malignancies.

—*Science Looks at Smoking*

Research Findings in Phrenotropic Drugs Important to Every Physician

VERONICA M. PENNINGTON, M.D.†
Jackson, Miss.

During the past four years ataraxic and analeptic drugs have, in my experience, created vacancies in hospitals for the mentally ill by making possible a return home of hundreds of acute and chronic psychiatric cases, formerly hospitalized from two weeks to thirty years. These phrenotropic drugs have also prevented an unknown, but large number of patients from going to state hospitals.

During this four-year period of research in psychopharmacology we have discovered beneficial action of these phrenotropic drugs in every field of medicine. It is these qualities that I wish to discuss. These medicaments when utilized to the full of their possibilities, should prove useful to every practitioner. A thorough knowledge of action and production of side effects is requisite for the intelligent use of any medicament, and is particularly indispensable with the phrenotropic drugs.

SERPASIL

The large dosage necessary for restoration and improvement in psychiatric cases produces more side effects than the small dosage needed for practically all other conditions. Reserpine[1],[2],[3],[4] isolated (serpasil) in 1953 by the Ciba workers at Basel, Switzerland, when given in 0.50 mg. doses two to four times daily produces a tranquility which cannot be disturbed by the frustrations of difficult times, so common in the lives of so many, i.e., the preoperative period, death in the family, catastrophic occurrences, and anxieties out of proportion to their cause. Psychologic reactions due to somatic disease, terminal conditions, convulsive seizures, drug addiction[6],[12], alcoholism[21],[22],[23], asthma, allergies[5], neurodermatides, can be relieved. Many cases of essential hypertension have yielded to ½ mg. once a day and a salt free diet.

Globus[7] can be relieved or alleviated by 0.10 mg. to 0.5 mg. of serpasil once or twice a day. It is also useful during withdrawal of narcotics and alcohol and supports abstinence measures[8].

Ambulatory geriatric patients can frequently be managed at home on serpasil because of improved behavioral adjustment[9] which also makes them better hospital patients[10].

Rauwolfia products can be used to advantage in head injuries and following craniectomy which render the patient restless and irritable[13].

Eneuritic children who are hyperkinetic have been effectively controlled by .75 mg. of serpasil daily[14].

In hypertensive emergencies due to over exertion, analeptic drugs or any cause, intervenous or intramuscular, serpasil is a safe and effective agent[15],[16].

Patients with Huntington's chorea do not have the muscle tremors or athetoid movements when taking serpasil, and their irritability and impulsive assaultiveness disappears.

In the toxemia of pregnancy serpasil has been found effective in 2.5 to 5 mg. parenterally statim, with further dosages regulated by the condition of the patient. No foetal complications occurred[17].

In pediatrics serpasil elixir is useful in sleep disturbance, hyper-irritability and hypertonicity, enuresis and infantile colic[18]. The initial dose of 0.1 mg. t.i.d. can be increased or decreased as the need suggests[19].

In cardiac conditions such as post coronary occlusion, tachycardia neurocirculatory asthenia with dyspnea, precordial pain and palpitation, premature auricular or ventricular contractions serpasil in 0.1 mg. two to four times a day will relieve the symptoms[20]. In chronic mitral disease where the heart rate remains rapid in spite of digitalis, in hyperthyroidism, in auricular fibrillation not responsive to digitalis, the bradycardic effect of serpasil is useful[11].

Depressions mild and severe following the use of reserpine and whole root Rauwolfia have been reported, but none has occurred in my series of one thousand cases.

MILTOWN

Miltown acting on the thalamus[27],[28] not only reduces psychologic stress preoperatively but also produces muscle relaxation necessary in surgery. In over eight hundred and thirty-six cases no side

---

*Presented before the Section on Medicine at the eighty-eighth annual session of the Mississippi State Medical Association, Jackson, Miss., May 14-16, 1957.

†Clinical Instructor in Psychiatry at the Mississippi Medical School, Attending Physician to the University Hospital, Senior Certified Psychiatrist at Mississippi State Hospital.

effects except hypotension in doses above 10-400 mg. b.i.d. daily have been noted[20]. It is a safe medicament to be given when supervision of the patient is brief.

In 1956[24] I made a survey of one thousand women to determine the incidence of premenstrual tension. This group was predominantly high school and college women, office workers, nurses, attendants and some housewives. Ninety-five per cent suffered from premenstrual tension and of this ninety-five per cent, eight per cent had dysmenorrhea alone, while ninety-two per cent had dysmenorrhea plus other symptoms. Out of this group of one thousand women, forty-two, ages sixteen to forty-two, suffering from premenstrual tension and primary dysmenorrhea since the menarche were given miltown and placebo (unknown to them). Twenty-eight received medication only when the symptoms appeared and continued until they disappeared. Fourteen took 1-400 mg. tablet of meprobamate after each meal continuously. The investigation covered a twelve-month period. The medication was just as effective when given only as the symptoms began, as when given continuously. Seventy-eight per cent had complete relief of their symptoms while twenty-two per cent had partial relief.

Sleep is facilitated in practically every case taking miltown. The analeptic depressants, such as the barbiturates which act principally at the cortical levels have the disadvantage of rendering the patient helpless in his milieu and reduce cerebral oxygen consumption while the ataraxics provide sleep and rest with easy arousal, thus patients cannot only care for their physiologic needs but easy arousal prevents the possibility of blood stagnation with its attendant danger of thrombi and emboli production.

An unexpected result of miltown treatment is that of staunching the odor of perspiration. For several years four of our patients have been known to have a strong acrid perspiration odor which no amount of bathing changed. Under miltown treatment, bromhidrosis subsided completely.

In various inflammatory dermatoses, such as pruritus ani and vulvae and neurodermatitis, miltown has a consistently tranquilizing effect[25,26,41]. As an adjunct in the treatment of allergic patients with gastro-intestinal allergy, angio-neurotic oedema, allergic headache, asthma and hay fever, meprobamate is most effective[26,27].

Miltown is relatively non-toxic and is not habit forming in my experience, as proved by the sudden discontinuation of patients on 24 (400) mg. daily with no withdrawal symptoms. Increase in dosage is not necessary for sustained beneficial effect once the proper dosage has been found. There is no craving for meprobamate which is difficult to resist while the built-up tolerance requires increased dosage to satisfy it, nor are there untoward symptoms when the drug is withdrawn as with barbiturates and narcotics[41,33].

In the April, 1957, issue of *Northwest Medicine* two cases of addiction to meprobamate are reported[31].

Meprobamate symptomatically relieved stiffness and thereby much or all of the pain in rheumatic diseases where fibrositis is the predominant characteristic[30].

Where side reactions might interfere with normal function miltown is of particular value in the treatment of out-patients[32]. Since all diseases are psychosomatic in nature effecting both the psyche and the soma, the body and the mind, miltown's holistic action is doubly beneficial[34].

Effective orally or rectally (suppositories) in thirty minutes, miltown, being productive of no blood dyscrasias, Parkinsonian-like syndrome, liver toxicity, nasal stuffiness, dystonia, blurring of vision, diarrhea, is ideal for appropriate use in office practice where twenty-four-hour surveillance of the patient cannot be maintained. It produces no behavioral abnormality as tests of vision, steadiness and driving have proved[35].

In musculo-skeletal disabilities with neuromuscular disturbances meprobamate not only tranquilizes the emotions but it exerts a relaxing effect on the muscle spasm, tension and rigidity while tonus is lessened[36].

As an adjuvant in the treatment of alcoholism and drug addiction miltown is especially useful in providing relief from agitation, anxiety, sleeplessness and tremor during the withdrawal period. Since it does not potentiate sedatives or effect autonomic balance it is safe to use in debilitated cases. Because miltown produces no habituation in the experience of most research workers or depressions, it is ideal for use among addicts[37,38].

Patients become more responsive to hypnosis when miltown is used[39].

Miltown controls pain accompanying neoplastic disease without clouding the sensorium, making opiates, with their deleterious effects, unnecessary. Hangovers do not accur as with the barbiturates[40].

In petit mal and minor motor seizures meprobamate in relatively large doses, twelve to fourteen 400 mg. tablets daily, is effective in about half of the cases and it is non-toxic[42,43,44].

In the everyday office practice of the general practitioner a variety of functional and organic disturbances such as the anxiety states, thyrotoxicosis, neurocirculatory asthenia, chronic rheumatic states, irritable and spastic colon, dysfunction of the upper gastro-intestinal tract, cardiac neuroses and other conditions are specifically benefited by miltown[45].

METHYL-PHENIDYLACETATE (RITALIN)

A central motivant with sub-cortical activity which elevates the mood, increases kinetic activity and stimulates a normal interest in the milieu. It causes mild depressions to vanish and animates those in catatonic mutism and inhibitory states. It changes dull, apathetic patients into more alert, interested ones.

Ritalin is an analeptic or euphoriant of particular value in psychiatric cases. It stimulates apathetic and negativistic patients to more normal, productive activity. It overcomes the confusion of the arteriosclerotic and sharpens their memories[16]. In over sedation from any alapathic depressant or ataraxic it arouses the patient, and in cases of over sedation with suicidal intent it can be life saving. In my study of two hundred patients receiving ritalin the arteriosclerotic group became more alert, confusion was lessened and they were better able to care for themselves.

It relieves bradycardia, poor appetite and low blood pressure in many cases with vegetative depression[46,47].

In over sedated epileptic patients and in acute barbiturate poisoning ritalin is an effective antidote[48].

Following the use of sodium pentothal plus nitrous oxide anaesthesia ritalin has proved to be an effective and speedy awakener[49].

Neurotics, who can not get going in the morning, experience a favorable effect on their dragged-out feeling and are alerted to the day's work when taking 10 to 20 mg. of ritalin upon arising[50]. In combination with ataraxics where the dose required to produce tranquilization also produces drowsiness, ritalin overcomes the undesirable inertia while permitting the full benefit from the ataraxic[16,51]. It also relieves the nasal congestion due to reserpine. In the fatigue of the menopausal period many patients feel better following ritalin therapy[52]. Patients, fatigued and depressed because of tensions produced by the stress and strain of life, chronically ill patients and convalescents from debilitating diseases shed their depression and become more alert and less easily fatigued on 10 mg. of ritalin t.i.d.[53].

THORAZINE

My study of thorazine began February, 1955, with one hundred patients and enlarged to three hundred and fifty by April of 1956. Since then several hundred patients on my service have benefited from thorazine therapy. During this study it was noted that many somatic complaints were relieved or alleviated by chlorpromazine. The movements of Huntington's chorea have been completely relieved as well as those of chorea gravidarum[54]. Post-encephalitic states, athetosis and cerebral palsy have been benefited by this ataraxic[55]. Cases of hemiballismus and dystonia musculorum have improved objectively and subjectively[56]. Thorazine is effective therapeutically and/or prophylactically in drug disease, irritation and pregnancy induced nausea and vomiting. However, a diagnosis of the cause of the vomiting should be made before chlorpromazine is given as it may interfere with diagnoses such as brain tumor, intestinal obstruction or overdose of poisons. In acute, severe cases thorazine should be given intramuscularly, 25 mg. with the patient remaining in a recumbent position for a half an hour. This dose can then be repeated until the symptoms are controlled[57]. As an antiemetic agent in children chlorpromazine is effective and safe[58].

Tension headaches including migraine are relieved or markedly improved by small doses of chlorpromazine[59,60]. Thorazine is a relief-giving adjuvant to the usual therapies without effect on the pathology used in arthritis, of arthritis[61].

Patients suffering from tuberculosis gain weight and have their tensions and apprehension lessened by chlorpromazine. This hastens their improvement[61].

Psychomotor excitement due to any cause such as senile dementia, cerebral arteriosclerosis, manic state, catatonic excitement, depressive agitation, anxiety neuroses, toxic delirium, thorazine gives most gratifying results even when other sedatives fail.

Because of its emetic action and ability to induce relaxation and sleep thorazine is useful in the tremulousness, nausea and vomiting and other withdrawal symptoms of the alcoholic patients[62,63].

Since alcoholic patients are especially susceptible to cardiovascular collapse their blood pressure should be taken frequently and they should be in the prone position when receiving thorazine. Stuporous patients should not be given thorazine since it potentiates sedatives.

Pain due to severe burns, neuralgia and injuries is markedly reduced by chlorpromazine[64,65,66].

In spite of its hypotension producing quality chlorpromazine affords protection to the patients in surgical and post-anaesthetic shock[67]. Reflex irritability, as in laryngospasm, bronchospasm, coughing and breath-holding, due to any cause but especially present during the induction phase of anaesthesia, is reduced or prevented by thorazine. Retching from gastric traction has been controlled by this medicament[68],[69].

The induction of hypothermia used in surgery likely to produce anoxia is greatly facilitated by the added use of chlorpromazine. This technic is also useful in ameliorating or preventing post-operative hyperpyrexia[70].

Hypertensive cardiovascular disorders in children and adults should be cautiously treated with thorazine pre- and post-operatively. They should be kept recumbent and if hypotension occurs adequate replacement of body fluids, pressure bandages, head-down position and nor-epinephrine should be used. Thorazine reverses the action of epinephrine.

Intractable hiccoughs are promptly controlled by 25 to 50 mg. of chlorpromazine intramuscularly.

For the prompt control of behavior disorders, hyperactivity, severe pain, nausea and vomiting in infants and children, Thorazine is most effective and there is no problem of side effects as there is with adults[58],[60],[71].

Severe, chronic or acute asthmatic attacks can be controlled and terminated by 50 mg. of thorazine by mouth or by deep muscular injection when a quick relief is sought. Chlorpromazine, because it eliminates the possibility of narcotic addiction and because it causes no respiratory depression, is a particular value in asthmatic cases[72],[73].

The scratching, itching, restlessness and insomnia accompanying neurodermatitis are relieved or ameliorated by chlorpromazine; however, it must be remembered that this drug produces dermatitis of the measley or urticarial type in certain, susceptible persons. Withdrawal of the medication or protection against contact alleviates the condition in most instances[74].

In narcotic and barbiturate addiction, withdrawal can be accomplished at once with very little discomfort when thorazine is used. The belligerence, insomnia, nausea and vomiting usual in these cases is absent[75],[76], [77].

RAUDIXIN

Whole root rauwolfia serpentina, used one thousand years before Christ, was found beneficial as a sedative and anti-hypertensive in 1943 by Chopra, Gupta and Mukherjee and to be an effective tranquilizer with bradycardic effects[10],[78],[79],[80].

My two-year study of two hundred neuropsychiatric cases taking raudixin 13.9 per cent were considerably improved. A seven-month double blind study in which one hundred and ninety-six patients received raudixin, 3.44 per cent were greatly improved, 17.1 per cent were considerably improved and 41.28 per cent showed some improvement[10]. Improved mental and emotional condition following the use of raudixin has been proved by other workers[81],[82],[83].

Raudixin is beneficial in many cases of thyrotoxicosis with the pulse and basal metabolic rates returning to normal, gain in weight made and a marked reduction of tenseness and insomnia[84],[85]. As an adjuvant in the treatment of diabetes raudixin promotes a smooth control of ketosis and hypoglycemia in labile patient[86].

In some cases of psoriasis raudixin has completely cleared the lesions. Two or three months' time may be necessary for improvement to occur[87],[38]. In emotionally disturbed children rauwolfia gives excellent assistance in speech and reading disorders by overcoming their hyperirritability and hyperactivity[89].

Daily oral doses of rauwolfia not to exceed 200 mg. daily in cases of peptic ulcer did not significantly increase gastric secretion or uropepsin excretion but did exert a betterment with lessening of pain and increased feeling of well being[90],[91].

TRILAFON

Trilafon is a tranquilizing agent, a phenothiazine derivative and in my eight months study with one hundred psychiatric cases, twenty-four per cent were greatly improved, thirty-two per cent were considerably improved and twenty-two per cent were slightly improved, while twenty-two per cent showed no change. One patient, whose erotic tendencies were stimulated by chlorpromazine, was restored mentally by trilafon without exciting unwanted tendencies. The side effects with trilafon were negligible, consisting of slight tremors, restlessness, ptyalism and dystonia, all of which cleared up with reduction of the dosage.

PLACIDYL

In insomnia and tension states 500 mg. dosage of placidyl is an effective hypnotic without side effects or hangover in my experience with one hundred and fifty cases. This finding is corroborated by others[92].

BENACTYZINE

Benactyzine used in sixty neuropsychiatric cases produced no side effects, thirty per cent of this number were slightly improved, nineteen per cent were considerably improved and in fifty-one per cent there was no change. In emotional-provoking stress the autonomic responses are less severe with the use of benactyzine[96].

PACATAL

Pacatal, a phenothiazine derivative, is a phrenotropic agent which has been reported to be also useful pre- and post-operatively in inducing smooth anesthesia and preventing postoperative vomiting[93]. In my series of one hundred and eighty-four white male and female patients taking pacatal in dosage range from 25 to 100 mg. t.i.d., six per cent developed side reactions, blurring of vision, dry mouth and throat, dystonia, and hyperthermia, which in all but two cases was accounted for by infections, and in one case by status epilepticus from which he had previously suffered.

VESPRIN

Vesprin, a phenothiazine derivative, has been used by me with some success in fifty neuropsychiatric patients with the promise of betterment in many of them. However the length of time vesprin has been used has not been long enough to evaluate this drug properly.

ULTRAN

Ultran indicated in back pain, urinary frequency, migrane, anginoid pain, dermatitis, headache, menopausal syndrome is a neurosedative that acts quickly and efficiently without sacrificing mental alertness and dexterity.

MARSILID

Marsilid is reported to be effective in schizophrenic and depressive depressions. It stimulates those in catatonia. It has also been extensively used in tuberculosis. It has been helpful in rheumatoid arthritis and chronic debilitating disorders. It is a resurgitive drug and is helpful in anorexia[96],[97].

ISONIAZID

Isoniazid is reported to be useful in tuberculosis. It is also beneficial in schizophrenic and manic depressions. Increased appetite and gain in weight, as well as pain relief and wound healing have been the benefits gained from this analeptic[96].

CONCLUSIONS

1. Life is our most precious possession. Every action and thought should be directed to conserve and make it more enjoyable. To this end all drugs should be administered with watchfulness, discrimination and only when needed to better the patient's condition.
2. The ataraxic and analeptic drugs effect this betterment in every field of medicine, but not necessarily in every patient.
3. Dosage is individual and must be adjusted to the need of the patient. Time must be allowed for improvement which may mean weeks or months.
4. Side reactions occur, particularly with high dosage, just as they do with most drugs. Stoppage of the medication or reducing the dosage is usually all that is required for betterment.
5. The physician should have a full knowledge of the possibilities, both good and bad, of any drug he prescribes.
6. The ratio of detrimental action to good accomplished is far less, in the use of these medicaments, than it is in surgical, obstetrical, anaesthesiological and other procedures, as the millions of ataraxic and analeptic drug trials in the past four years have proved.
7. The use of narcotics and alipathic depressants, with their deleterious effects and habituating tendencies, are obviated by the advent of tranquilizing drugs.

BIBLIOGRAPHY

1. Janel, P.: Pautomatisme Psychologique, Paris; Alcan, 1889.
2. Chopra, R. N., Gupta, J. C., Mukherjee, B.: 1933, The Pharmacological Action of Alkaloid Abtained from Rauwolfia serpentina, Benth, Indian J. Med. Research, 21:261.
3. Siddiqui, S., Suddiqui, R. H.: 1931, Chemical Examination of the Roots of Rauwolfia serpentina, Benth. J. Indian Chem. Soc., 8:667.
4. Mueller, J. M., Schilitter, E., & Bein, H.: 1952, Reserpine, der sedative Wirkstoff aus Rauwolfia serpentina, Benth, Experiential, 8:338: Dorfman, L., Furlen Meier, A., Huebner, C. F., Lucas, R., MacPhillamy, H. B., Mueller, J. M., Schlittler, E., Schwyzer, P., & St. Andre, A. F.: Die Konstitution des reserpins. Helv. Chem. Acta, 37:59.
5. Pennington, V. M.: The Use of Reserpine in 350 Neuropsychiatric Patients, Presented before the Regional A. P. A. Meeting at Galveston (Feb. 1955), and published in monograph form by the A. P. A.
6. Zimmerman, Fend Bergemeister, Dept. of Neurology, College of Physicians, and Surgeon, Columbia University, New York City: Epilepsy, Progress in Diagnosis and Treatment.
7. Mohun, M.: Laryngoscope 65:73, (Feb., 1955).
8. West & Swegan: An Approach to Alcoholism in the Military Service.
9. Sainz, A. A.: Ann. New York Acad. Sc. 61:72, 1955.
10. Pennington, V. M.: A Two-Year Comparative Study of Ataraxics — To Be Published in the Journal of Geriatrics.
11. Zaky, H. A.: (Letters to the Editor) Lancet 2:-600 (Sept. 18), 1954.
12. Lambros, V. S.: Ann. New York Acad. Sc. 61:-220, 1955.
13. Lambros ,V. S.: Ann. New York Acad. Sc. 61:-211 (April 15), 1955.
14. Lambros, V. S.: Conference on Reserpine in the Treatment of Neuropsychiatric Neurological and related clinical Problems, New York Acad. Sc. New York City, Feb. 3-4, 1955.

15. Markovitz, M., Koik, J. V., Hick, F. K., Grissom, R. L.: Am. J. M. Sc. 229:486, May, 1955.
16. Pennington, V. M.: The Phrenotropic Use of Ritalin. Read before the Academy of Psychosomatic Medicine in New York City, (Nov. 22), 1956. To be published in Diseases of the Nervous System.
17. Lindley, J. E., Rogers, S. F., Moyer, J. H., Desmond, M.: M. Rec. and Ann., 49:363 (Aug.), 1955.
18. Haug, T. M.: Personal Communication.
19. Talbot, M. W. Sr.: Ann. New York Acad. Sc., 61:188 (Apr. 15), 1955.
20. Halprin, H.: J. M. Soc. New Jersey, 52:616 (Dec.), 1955.
21. Greenfield, A. R.: Personal Communication.
22. Hall, L. C.: Personal Communication.
23. Avol & Vogel: J.A.M.A., 159:1516 (Dec. 17), 1955.
24. Pennington, V. M.: Meprobamate In Premenstrual Tension, Read at Regional A.M.A. Meeting in Seattle, to be published in J.A.M.A.
25. Levan, P., Wright, E. T.: Use of Tranquilizers in Diseases of the Skin, California Med., 85:87 (Aug.), 1956.
26. Eisenberg, Ben C.: A Comparative Study of Commonly Used Tranquilizers as Adjuncts in the Treatment of Allergic Patients, presented at Annual A.M.A. Convention, (May), 1956.
27. Berger, F. M.: The Pharmacological Properties of 2-methyl-2-n-propyl-1-3 propanediol dicarbamate (Miltown), A New Interneuronal Blocking Agent, J. Pharmacol. & Exper. Therap., 112:413, 1954.
28. Berger, F. M.: Meprobamate — Its Pharmacological Properties and Clinical Uses, Internat. Rec. of Med. & General Practice, Clin., 169:184, 1956.
29. Pennington, V. M.: The Use of Miltown (Meprobamate) with Psychotic Patients. Read before A.A.A.S., Dec. 26, 1956, to be published in J.A.P.A.
30. Smith, R. T., Herman, I. F., Kron, K., Peak, W. P.: 100 Patients with Various Rheumatic Diseases, read before A.M.A., May, 1956.
31. Phillips, R. M., Judy, F. R., Judy, H. E.: Meprobamate Addiction, Northwest Med. 453:454, April, 1957.
32. Hollister, Leo. B.: Miltown and other Tranquilizers in Treatment of Anxiety, Personal Communication.
33. Pennington, V. M.: Habituation to Meprobamate, Jour. N. W. Medicine, March, 1957.
34. Berger, F. M.: Miltown in Emotional Tension and Muscle Spasm. Correspondence.
35. Marquis, D. C., Kelly, E. L., Gerard, R. W., Miller, J. G., Rapport, A.: Experimental Studies of Behavioral Effects of Meprobamate on Normal Subjects N. Y. Acad. Sci., in press, 1957.
36. Gillette, H. E.: Relaxant Effects of Meprobamate in Disabilities Resulting from Musculoskeletal and Central Nervous System Disorders, Internat. Rec. Med., 169:453, 1956.
37. Thimann, J., Gauthier, J. W.: Miltown as a Tranquilizer in the Treatment of Alcohol Addicts, Quarterly Journal of Studies on Alcohol Laboratory of Applied Physiology, -6- Yale University, New Hven, Conn. Vol. 17, pp 19-23, March, 1956.
38. Fox, Vernelle: Treatment of Withdrawal Symptoms in the Management of Alcoholism. Journ. Medical Association of Georgia, April, 1956.
39. Selling, Lowell, S.: Clinical Study of a New Tranquilizing Drug, Jour. A.M.A., April 30, 1955, Vol. 157, pp. 1594:1596.
40. Kessler, L. N., Barnard, R. D.: Med. Times, 84:431, 1956.
41. Levan, P. & Wright, E. T.: Use of Tranquilizers in Diseases of the Skin, A Preliminary Report, California Med. 85;87, (Aug.), 1956.
42. Gibbs, F. & Stamps, F.: At University of Illinois, Neuropsychiatric Institute, Unpublished Report.
43. Livingston, S., At Epilepsy Clinic, Johns Hopkins University Clinics, Baltimore, Personal Communication.
44. Perlstein, M. A., At Cook County Hospital, Chicago. Unpublished Report.
45. Altschul, A. & Billow, B.: The Clinical Use of Miltown, New York State J. Med. In Press, 1956.
46. Noce, R. H. & Williams, D. B.: Personal Communication.
47. Geller, W.: Die Medizinische 16:606, (April), 1955.
48. Carter, C. H.: Personal Communication.
49. From Dental Investigator, Personal Communication.
50. Stier, C.: Ther. Gegenwart 94:92, (March), 1955.
51. Ferguson, J. T.: Ann. New York Acad. Sc. 61:101 (April), 1955.
52. Renzi, V. A.: Personal Communication, 1955.
53. Nathenshon, A. L.: To be Published.
54. Lehmann, H. E.: Therapeutic Results with Chlorpromazine in Psychiatric Conditions, Canad. in M.A.J. 72:91, (Jan. 15), 1955.
55. Denhoff, E. & Holden, R. H.: The Effectiveness of Chlorpromazine with Cerebral Palsied Children, Jour. Pediat. In Press.
56. Tatlow, W. F. T., Fisher, C. M., Dobkin, A. B.: The Clinical Effects of Chlorpromazine on Dyskinesia, Canad. M.A.J., 71:380, (Oct.), 1954.
57. Friend, D. G., Cumming, J. F.: New Antiemetic Drug — Preliminary Report J.A.M.A., 153:480, (Oct. 3), 1953.
58. Daeschner, C. W. et al: Chlorpromazine in the Control of Vomiting in Children, Preliminary Clinical Evaluation, Am. J. Dis. Child, 89:525, (May) 1955.
59. Archibald, H. C.: Headaches (Correspondence) J.A.M.A., 157:1042, March 19, 1955.
60. Moyer, J. H., Kimross-Wright, V., Finney, R.M.: Chlorpromazine as a Therapeutic Agent in Clinical Medicine. Arch. Int. Med. 95:202, (Feb.), 1955.
61. Unpublished Data, Medical Department, Smith, Kline & French, Lab. Phila.
62. Albert, S. N., et al: The Use of Chlorpromazine in the Treatment of Acute Alcoholism, M. Ann. District of Columbia, 23:245, (May), 1954.
63. Mitchell, E. H.: Chlorpromazine in the Treatment of Acute Alcoholism, Am. J. M. Sc. 229:363, (April), 1955.
64. Howell, T. H., Harth, J. A., Dietrich, M.: The Use of Chlorpromazine in Geriatrics, Practitioner, 173:172, (Aug.), 1954.
65. Lucas, J., Klopp, C. T. et al: Thorazine as an Aid in Management of Cancer Patients, Proc. Am. A. Cancer Research, 1:30, (April), 1954.
66. Sadore, M. S., Balagot, R. C.: The Value of Chlorpromazine in the Management of Pain, Internat. Rec. Med. & Gen. Pract. Clin. 168:346 (May), 1955.
67. Dobkin, A. B., et al: Chlorpromazine in Anesthesia for Surgical Treatment of Pulmonary Tuberculosis, Anaesthesia, in Press.
68. Morris, G., Mathews, W., Moyer, J.: Clinical Experience with Chlorpromazine in Spinal Anaesthesia, Anesth. & Analg., 33:340, (Sept.-Oct.), 1954.
69. Mathews, W. A., Morris, G. C., Jr.; Moyer, J. H.: Use of Chlorpromazine In Anesthesia, Am. Pract. & Dig. Treat. 6:360 (March), 1955.

70. Laborit, H.: Artificial Hibernation Acta. Anesth. Belg. 2:710 (Dec.) 1951.
71. Steigman, A. J., Vallbona, C.: Chlorpromazine, A Useful Antiemetic in Pediatric Practice, J. Pediat. 46:296, (March), 1955.
72. Ende, M.: Chlorpromazine Hydrochloride in the Treatment of Asthma, Am. Pract. & Dig. Treat. 6:710, (May), 1955.
73. Broglie, M., Jorgensen, G., Voss, G.: The Neuroganglioplegic Treatment of International Diseases with Phenothiazine Derivatives, Special Consideration to Bronchial Asthma, Aerztl, Wehnschr, 8:1148, (Nov. 27), 1953.
74. Tilley, R. F., Barry, H. Jr.: Chlorpromazine Treatment for Relief of Itching in Severe and Refractory Neurodermatitis, New England J. Med. 252:229, (Feb. 10), 1955.
75. Aivazian, G. H.: Chlorpromazine in the Withdrawal of Habit Forming Drugs In Addicts, Dis. Nerv. System, 16:57, (Feb.), 1955.
76. Friedgood, C. E., Ripstein, C. B.: Use of Chlorpromazine in the Withdrawal of Addicting Drugs, Preliminary Report, New England J. Med. 252:-230, (Feb. 10), 1955.
77. Brooks, W., Deutsch, L., Dickes R.: The Use of Chlorpromazine Hydrochloride in the Treatment of Barbituate Addiction with Acute Withdrawal Syndrome, Am. J. Psychiat. 111:696, (March), 1955.
78. Perera, G. A.: Rauwolfia serpentina in Hypertensive Vascular Disease, Proc. Soc. Exptl. Biol. Med., 86:453, (July), 1954.
79. Moyer, J. H., Dennis, E., Ford, R.: Drug Therapy (Rauwolfia) of Hypertension A.M.A. Arc. Internal. Med., 96:530, (Oct.), 1955.
80. Saland, G., Fisher, I., Hermried, H. P., Stoliar, E. D., Zurrow, H. D., Clinical Observations on the Oral Use of Hexamethonium Hydralazine and Rauwolfia Extracts in Essential Hypertension, New York State J. Med. 56:1276, (April 15), 1956.
81. Simonsen, M. N.: Reports to the Squibb Institute for Medical Research, Aug. 8 to Sept. 28, 1955.
82. Floris, D. V.: The use of Rauwolfia Serpentina in Neuropsychiatry, Minerva Med. 1:944, (March 31), 1956.
83. Kline, N. S.: Use of Rauwolfia Serpentina Benth in Neuropsychiatric Conditions, Ann. New York Acad. Sci., 59:107, (April 30), 1954.
84. Lovei, E. and Bona, A.: Rauwolfia Serpentina and Thyrotoxicosis, British Med. J. June 9, 1956, pp. 1366.
85. Paykoc, K.: Paper presented before the Turkish National Medical Convention. September, 1955.
86. Pomeranze, J.: Preliminary Observations on the Use of Rauwolfia in Labile Diabetes, Monographs on Therapy 1 (2): Oct., 1956.
87. Genest, J. Adam Kiewicz, L.: Robillard, R., Tremblay, G.: Clinical Uses of Rauwolfia II in Psoriasis and in Constitutional Leanness, Canad. M.A.M. 72:490, (April), 1955.
88. Leslie G.: Rauwolfia Serpenina, In Psoriasis, British Med. J. June 11, 1955, pp. 1428.
89. Weir, H. F., Anderson, R. L.: The Effects of Reserpine and Rauwolfia in Minor Disorders of Adjustment in Childhood, Monographs on Therapy 1 (2), Oct., 1956.
90. Cummings, J. F., Balfour, D. C.: Effects of Rauwolfia Alkaloids on the Excretion of Uropepsin in the Human, J.A.M.A., 161:864, June 30, 1956.
91. Schneider, E. M., Clark, M. L.: The Effect of Rauwolfia Alkaloids on Gastrick Secretion, Monographs on Therapy 1 (2), October, 1956.
92. Paul, William, D.: Private Communication to Abbott Laboratories.
93. Horatz, K.: Die Potenzierte Narkos Mit dem Phenothiazin Kroper, p. 391, Anasthesist, 3:193, 1954.
94. Davies, J. I., Huggins, D. H. M., Wolkenstein, C. F.: Use of Pacatal (A Phenothiazine Derivative) in Anesthesia: A Preliminary Report, Presented at Meeting Canadian Anesthetists Society, Vancouver, April 5-7, 1956.
95. Jacobsen, E., Kehlet, H., Larsen, V., From Biological Laboratories of Medicinalco, Ltd and the University Clinic of Psychiatry, Rigshospitalet Copen.
96. Bosworth, D., Fielding, J. W., Acosta, M.: The Use of Iproniazid in Nontuberculous Bone and Joint Infections, J.A.M.A., Jan. 8, 1955, Vol. 157, p. 132-136.
97. Drs. Nathan S. Kline, John C. Saunders and Harry P. Loomer, of Rockland State Hospital, Orangeburg, N. Y.: Dr. Arthur L. Scherbel of the Cleveland Clinic, Cleveland, Ohio: Dr. David M. Bosworth of St. Luke's and Sea View Hospitals, N. Y. City: and Dr. George E. Crane of Montfiore Hospital, New York City.

Farm and Ranch magazine points out that "In 1914 state and local governments spent 70 per cent of all money spent by government. Now 70 per cent is spent by Washington bureaucrats." "A big part of our tax money never comes back to us in services—but it lived up by the swarms of bureaucrats whose hands it goes through."

President Eisenhower has proposed that the states assume responsibility, in whole or in part, for many projects now handled on the federal level. If the states will do that, the taxpayers will find that they will get more and better service—and for less money.

Plastic Surgery As Done by the General Practitioner*

McCARTHY DeMERE, M.D.
Jackson, Miss.

WE PHYSICIANS who limit our practice to plastic surgery are naturally proud of the progress that has been made in plastic surgery in the past fifty years. However, when we look at the record of progress in the destructive instruments of the past fifty years, we can see that it would be impossible to keep pace with the automobile and the atom bomb.

Plastic surgery has not become mechanized and the most important instruments are still the God-given powers of perception and judgment.

Every general physician is confronted with plastic surgery problems every day, and from a glance at statistics the problems are going to increase tremendously in the next few years, therefore, it is imperative for the sake of the person who receives maiming and crippling injuries that an active interest be taken in plastic surgery by the physician who sees these injuries.

Plastic surgery is simply the meticulous application of our principles of surgery and the role of the general practitioner is to diagnose, to know what can and should be done and to do whatever he is capable of doing.

One of the most frequent plastic surgery problems is the laceration of the face. Thorough preoperative records should be made, particularly in regard to nerves and ducts that have been injured and a diagnosis of all fractures should be made before any attempt at soft tissue repair is done. We emphasize the use of inspection and palpation before the x-rays are taken. This gives a good idea as to the damage present and also makes the reading of the radiograph much easier. Always ask the patient about his vision. If double vision is present, find out which image is displaced. Ask the patient if his teeth fit together differently from the way they fitted before the accident. It only takes a few seconds for these simple procedures which may prevent a life-long deformity.

One of the best ways to examine for fractures about the face is done with the examiner standing above the patient and palpating simultaneously both sides of the face. Don't be hesitant about actually grasping the upper and lower jaws to see if movement is present.

Knowing what can be done is absolutely essential before any intelligent treatment can be carried out. One should familiarize himself with all the various means of treatment and do the ones which are within his training. There are many ways of accomplishing good results in plastic surgery and the individual must make up his own mind in regard to the ones which are more suited to his particular skill. It is usually unwise for the physician and unfair to the patient for a physician to perform a procedure which he has never seen done. Many textbooks on plastic surgery have misleading descriptions of procedures, even recent textbooks are still publishing methods which have been outmoded for many years. Accomplish the result by the simplest method possible. Emphasis is placed on the cardinal principle "gentleness". Gentle handling of tissues will pay dividends. Débridement is always done gently and every shred of viable tissue is preserved. No major revisions are ever attempted primarily. Approximation of the tissues must be accomplished in layers and the finest sutures used that will hold the tissues together. In wounds about the face, 4-0 plain catgut is usually quite strong enough for any subcutaneous suture and nothing larger than 5-0 non-absorbable suture should be used in the skin. In reapproximating jagged lacerations, one should star tat known points such as the corner of an eye, vermilion border of lip, and work to unknown points.

Reduction and fixation of facial fractures can be done by many excellent methods. Avoid the use of complicated head caps and external appliances and use the simplest method that will firmly immobilize the fractures.

The patient who sustains a severe burn is no longer a burden on his family and community for years but is returned to active duty in weeks. When full-thickness skin loss is present, spontaneous healing takes place by epithelial ingrowth from the wound edges combined with scar contracture. This is nature's way of making the wound smaller. The process takes months and results in distortion and loss of function. It also too frequently leaves the patient a helpless cripple. Full thickness loss should be treated by early skin grafting. The perfection of instruments for taking skin grafts has brought this procedure within the scope of any dextrous surgeon.

Every general practitioner is confronted with the question whether a mole should be removed or not and what are the chances of malignancy.

---

*Presented before the Section on Surgery at the eighty-ninth annual session of the Mississippi State Medical Association, Jackson, Miss., May 14-16, 1957.

If a lesion is worth removing, it is worth sending to the pathologist for diagnosis. We urge removal of all skin tumors which change in character, and all which lie in areas likely to become irritated. In this latter category we include such locations as under a belt, or strap, or on the palms of the hand or soles of the feet. Simple elliptical excisions, made to lie along skin creases, suffice in most lesions. On the face the incisions are placed in the "smile lines". These are lines or wrinkles which become evident when the person smiles. The same principles of fine sutures placed close to the edges is followed and sometimes subcuticular, interrupted sutures are placed to prevent widening of the scars.

Hand injuries are handled in a similar manner to injuries of the face, remembering that digits can always be amputated but never replaced, and even one phalynx lost can mean the difference between a good and a poor hand. It is a temptation to consider sacrificing an exposed phalynx to get a wound which will close easily and heal per primum, but there are methods of transferring skin at the time of the original injury which will preserve the full length and function of the injured digit.

In the repair of tendons, better general relaxation can be obtained with general anesthesia and more meticulous exploration and approximation can be done. Fine non-absorbable sutures are used and the hand is immobilized for three weeks before motion is started. The question as to whether the flexor tendons should be repaired primarily depends on the nature and location of the wound and must be decided by the examining surgeon.

SUMMARY

The duty of the general practitioner dealing with plastic surgery problems is to diagnose, to know what can and should be done, and to do whatever surgery he feels he is capable of doing.

Facial fractures should be suspected and diagnosed promptly, using the bilateral palpation method. For soft tissue repair use anesthesia, cleanse thoroughly, preserving all viable tissue, and replace parts to their original locations using fine sutures near the wound edges.

Severe burns with full-thickness skin loss should receive skin grafts early to prevent contracture and prolonged hospitalization.

Small skin tumors can be removed by elliptical excision placed in the skin creases. Any tumor worth removing is worth sending to the pathologist.

Conservation is urged in hand injuries with special emphasis on preserving the thumb.

ACS ANNUAL MEETING

The 1957 annual meeting of the American Cancer Society, Mississippi Division, will be held at Jackson, September 25-26, at the Heidelberg Hotel.

Of particular interest to physicians, the Professional Section will meet on September 26 at 2 P.M. The program will feature:

"Genital Cytology as an Adjunct in the Diagnosis and Management of State 0 Cervical Carcinoma in Private Practice" — Lawrence E. Gordon, Jr., M.D., Johnson City, Tennessee

"Management of Melanoma" — Samuel Wilkins, Jr., M.D., Emory University School of Medicine, Atlanta, Georgia

"Present Status of Therapy for Malignancies of the Stomach" — Ralph Bowers, M.D., Kennedy General Hospital, Memphis, Tennessee.

The Professional Section is co-sponsored by the Committee on Cancer Control of the Mississippi State Medical Association, the Mississippi Chapter of the American College of Surgeons, and the Mississippi Chapter of the American Academy of General Practice. Dr. Frank A. Wood, Jackson, chairman of the cancer society Planning Committee and MSMA Committee on Cancer Control, has issued a general invitation to all MSMA members to attend and participate in the meeting. No registration fee will be charged.

INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW

JOSEPH P. MELVIN, Jr., M.D. . Cardiology
HARVEY F. GARRISON, Sr., M.D. . . . . Pediatrics
JAMES D. HARDY, M.D., and STAFF, Department of Surgery, University Medical Center ....Surgery

CARDIOLOGY

TREATMENT OF GANGRENE OF THE FEET AND LEGS BY WALKING

By William T. Foley

(*Circulation*, May, Vol. 15, 1957—No. 5, Page 689)

Because of the poor outlook of gangrene of the lower extremities, any new therapy is to be considered critically before rejection; and this author suggests that in addition to the usual procedures in the treatment of arterial insufficiency with gangrene of the feet and legs, that walking exercises to stimulate collateral blood flow and to improve the metabolic state of the involved tissues be used. After careful protection of the damaged parts by bandaging and dressing, the patients were encouraged to stand and walk. Reports of this ambulatory regimen in 22 patients are presented, and the rather amazing fact that 21 of the cases healed is proof that this form of therapy may not be tossed aside lightly. The one case that was a failure and resulted in leg amputation did not walk because the patient's family insisted that "it was too much for mother to do".

One of the greatest stimuli to the development of collateral blood flow in the legs is walking. As far back as 1884, research workers found that the growth of collateral blood vessels was directly proportional to blood flow through them. This work was later confirmed by Sir Thomas Lewis. The 22 cases chosen in this study were essentially limited to those with sharply localized gangrene, either stabilized or of recent development. Contraindications would, of course, be severe debility, recent myocardial infarction, fever, severe myocardial insufficiency, active thrombophlebitis, or cellulitis and cerebral damage with paralysis. Physicians should reconsider the long accepted practice of insisting on bedrest for patients with gangrene of the feet or legs. Success in the above studies suggests that walking should be added to the regimen of the oscillating bed, reflex heat, abstinence from tobacco, antibiotics, bandages, relief from vasospasm, and treatment of associated conditions such as diabetes and heart failure.

COMMENT

This article adds another variation on the theme relative to the dangers of enforced bedrest and enforced inactivity of a part. The success in combatting such inactivity has manifested itself in postoperative cases by a diminution in thrombophlebitis, in postpartal cases by a rapid resumption of physiologic and anatomic normal states, in heart disease by a reported decrease in incidence of complications following heart attacks, and now in the actual treatment of arterial insufficiency by progressive, systematic walking. This has a parallel, of course, in coronary artery disease, as we have seen from earlier studies that the active walking patients have fewer heart attacks than the sedentary group, even though the incidence of angina is as high or possibly even higher. Undoubtedly walking to the limits of one's pain threshold will gradually decrease the frequency and intensity of angina in some patients, and the same principle may be active in the treatment of peripheral arterial insufficiency with gangrene.

PEDIATRICS

Treatment of Acute Rheumatic Fever. H. A. W. M. Tiddens. Maandschr. Kindergeneesk. 25:73-86 (March) 1957 (In Dutch) (Leyden, Netherlands).

It has not been definitely decided as yet what role salicylates, corticotropin, and cortisone play in the treatment of acute rheumatic fever. A joint report of British and American investigators concluded that, as regards the prevention of cardiac complications of acute rheumatic fever, the three drugs have about the same effect. Other observations suggested that possibly the dosages of hormones and of salicylates were not optimal in a number of patients. Better results have been obtained with larger doses of cortisone, but these doses produce more toxic effects. The salicylate therapy not based on the salicylate content of the blood levels of this drug varied greatly. Theoretical reasoning suggested that a combination therapy of salicylate and cortisone will produce better results than can be achieved with one of the drugs. The author outlines the combined use of salicylate and cortisone as recommended by Hold, and he describes observations on 10 children in whom he employed this treatment. No difficulties occurred, but this small number of patients, whose clinical aspects differed greatly, did not permit a definite evaluation of the treatment.

COMMENT

By Harvey F. Garrison, M.D.

We have had considerable experience in the treatment of rheumatic fever in children with both the salicylate and cortisone and also separately. It is our opinion that perhaps the three drugs of greatest importance in the treatment of rheumatic fever is penicillin and cortisone in the form of meta cortilen or prednisolone. All of these remedies may be used together or individually but untoward systems should be watched.

SURGERY

STAPHYLOCOCCAL EMPYEMA IN INFANCY

W. O. Barnett, M.D.

American Surgeon (in press)

Many aspects relating to the infectious involvement of the pleura in infants and children have been changed by the extended availability and widespread usage of potent antibacterial agents. Since 1938 the staphylococcus aureus has replaced the pneumococcus as the most frequent offending agent.

The usual avenue of invasion is by way of the trachea, bronchi and lymphatics. An overwhelming pneumonitis may terminate the process early, but more commonly a chronic course is pursued with the development of pleural involvement. Rupture of one of the multiple lung abscesses with discharge of pus into the pleural space may occur. The extent of pleural involvement is determined by the rapidity with which pyothorax occurs, the more slowly developing cases allowing time for walling-off of the involved area by parietal and visceral adhesions.

Ulceration and perforation of a bronchial wall may result from direct invasion. This allows air to escape with the establishment of a pyopneumothorax. Considerable tension may be established by a valve-like mechanism which permits air to pass only out of the bronchus. If the continuity of the surrounding lung tissue has not been interrupted, a pneumatocele may develop. The clinical course of this condition may be characterized by sudden onset of fever, abdominal distention, diarrhea, anorexia, listlessness and rapid respiration. An advanced process may be attended by cyanosis, tachycardia, and paleness. Dullness to percussion with limited expansion of the involved hemithorax may be demonstrated. Auscultation is of little value in the diagnosis of staphylococcal empyema in infants.

Radiographic findings of significance include pneumothorax, pneumatocele, and loculated empyema. The presence of air and fluid in the pleural cavity invariably suggests staphylococcal disease. The unequivocal establishment of a positive diagnosis must await culture of the staphylococcus from the blood, pleural fluid or lung.

Before the advent of antibiotics, the mortality rate for staphylococcal empyema was almost 100 per cent. Although the prognosis of this condition has been definitely improved by the widespread usage of penicillin and streptomycin, the emergence of resistant strains was soon apparent. Erythromycin and chloramphenicol are currently effective. Culture of empyema fluid with sensitivity studies should be among the early measures taken to control this infection.

Other measures of therapeutic importance include adequate maintenance of fluid and electrolyte balance, oxygen therapy, whole blood and thoracentesis. Prompt withdrawal of air may be a lifesaving measure in the presence of tension pneumothorax or pneumatocele.

It has become increasingly apparent that the early institution of closed intercostal drainage improves the prognosis and facilitates convalescence. A constant route of egress for fluid collections, as well as air, eliminates the need for frequent thoracenteses. Utilizing local anesthesia, insertion of a drainage tube is tolerated well by the acutely ill infant. Enzymatic débridement with streptokinase and streptodornase has been of value in selected cases. Properly managed patients seldom require pulmonary decortication.

Take from our hearts the love of the beautiful, and you take away all the charm of life.

—Rousseau

Ideals are like the stars—we never reach them, but like the mariners on the sea, we chart our course by them. —Carl Schurz

There is no gathering the rose without being pricked by the thorns. —Pilpay

Functioning Parathyroid Adenomas

Review of the Problem and Case Report

by William A. Neely, M.D. and Joel L. Alvis, M.D.
Department of Surgery, University of Mississippi
Medical Center, Jackson, Mississippi

INCIDENCE OF PARATHYROID ADENOMA

Although functioning parathyroid tumors might seem rare, it is estimated that ten per cent of all patients with renal calculi have this disease which, if untreated, usually leads to the death of the patient.

PATHOPHYSIOLOGY

According to Albright, an excess of parathormone causes phosphate to be excreted in large amounts by the kidney. This in turn causes a compensatory rise in the serum calcium level. The increased serum level results in abnormally large calcium losses in the urine (Fig. 1), and calculi frequently develop both in the renal parenchyma and in the collecting system. In addition, parathormone may exert an action directly on osteoclastic resorptive activity, and thus increase the excretion of calcium. Absorption of calcium from the gastro-intestinal tract has been shown also to be influenced by parathormone activity.

Osteitis Fibroso Cystica is the bone lesion that is now known to be associated with this disease, but by no means is always present. Pathological fractures may result from the massive demineralization of bone and bone pain is common, as in any osteoporotic lesion.

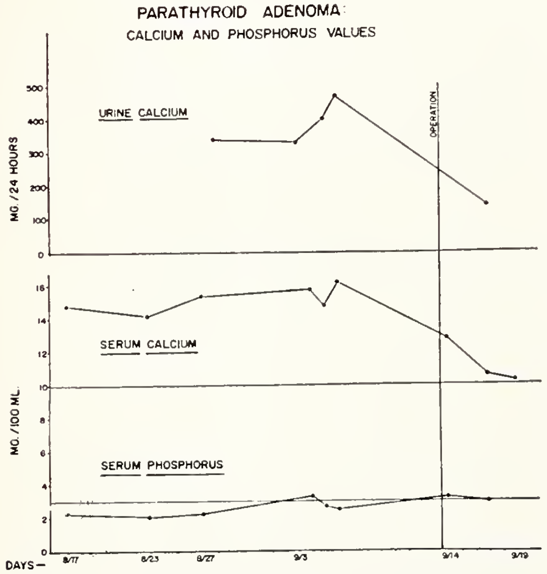


Figure 1. The serum values for calcium and phosphorus and the 24 hour urine calcium excretions are shown here. Note the sharp drop in the serum calcium levels and the rise in the serum phosphorus levels after the operation. Any value of 24 hourly excretion of calcium above 0.3 gm. provided the patient is on a low calcium diet, is considered abnormal.

Renal stones and the signs and symptoms that accompany them such as polyuria, polydipsia, urgency, frequency, pyuria, and obviously associated pyelonephritis are probably the most frequent and only findings in the disease, especially early.

Atony of the gastrointestinal tract, weakness, lassitude, anorexia, and weight loss, are associated with the high serum calcium level.

Secondary hyperparathyroidism may resemble closely primary hyperparathyroidism, but differs in that the primary defect is renal damage with phosphate retention. The retention of phosphate drives the serum ionic calcium level down. The parathyroid glands hypertrophy in an effort to try to maintain of calcium and a condition termed renal rickets may ensue. Thus, a vicious cycle is established. In severe renal damage the differential diagnosis between primary and secondary hyperparathyroidism is difficult if not impossible to make, as the end result of primary hyperparathyroidism is severe renal damage.

DIAGNOSIS

The diagnosis is usually established on the basis of *renal stones, bone lesions, serum chemistry values, and the excretion of calcium on a low calcium diet.* Although the signs and symptoms are variable, the diagnosis of hyperparathyroidism should be suspected in any patient with frequent urinary tract infections who also has renal calculi. A radiological diagnosis of osteitis fibrosa cystica is pathognomonic of this disease, as are tooth x-rays that show the absence of the lamina dura. The diagnosis is virtually established if the serum calcium level is repeatedly above eleven milligrams per cent and if the serum phosphorus level is below three milligrams per cent. Usually, but not always, the serum alkaline phosphatase is elevated. A word of caution should be mentioned concerning the interpretation of serum calcium levels, however, for approximately one-half of the serum calcium is bound by protein and this calcium is not under the influence of parathormone. For example, in multiple myeloma with an elevated serum protein level, a serum calcium of 10 to 15 milligrams per cent may be normal; moreover, in hypoproteinemic states a lowered serum total calcium level may be definitely abnormal in that the ionic calcium may be elevated; yet, this elevation will be unknown unless one considers the protein level. Notwithstanding, since measurements of serum ionic calcium are very difficult, if not impossible to perform, one must usually be content with the total serum calcium measurement coupled with a measurement of the serum proteins.

The *bone lesions* are characterized by generalized decalcification, bone cysts, and so-called "brown tumors". Generalized decalcification is seen on plain films of long bones, skull, and by the absence of the lamina dura on dental x-rays as mentioned above. Pathologic fractures are common late in the disease.

The *Sulkowitch Test,* when strongly positive, is highly suggestive of abnormal parathyroid function, provided the patient is on a low calcium diet (essentially a diet free of milk and milk products). There are other conditions that can cause an elevated calcium excretion but they need not be mentioned here.

TREATMENT AND PROGNOSIS

Preoperatively these patients need routine supportive therapy aimed at the urinary tract complication of infection.

During the operation no therapy is indicated for the deranged physiology. The operation must be performed in a bloodless field and the adenoma must be looked for until found. If it is not found in the neck the sternum must be split and the anterior mediastinum explored. Normal parathyroid glands are not removed. Routinely both sides are explored.

Postoperatively no therapy is indicated, other than routine measures, unless tetany develops. This can be controlled initially by the intravenous administration of calcium gluconate as required. After the emergency the calcium may be given orally, from 12 to 16 grams daily in divided doses being used. Vitamin D alone is useful. AT-10 (dihydrotachysterol), which acts slowly, is specific for the hypocalcemia but is rarely needed, moreover, it has cumulative toxic effects. Parathormone may be used as a temporary expedient when all other measures fail, until AT-10 has become effective.

After the immediate postoperative period in patients whose skeleton is severely demineralized, recalcification should be encouraged by the administration of a high protein, high calcium diet. Anabolic hormones such as androgens and estrogens may be used.

There is some inclination currently to watch the renal lesion for regression, but all agree that if no improvement is shown surgery is indicated for the renal pelvic stones, in an effort to save the remaining kidney parenchyma from further damage.

The prognosis in cases treated adequately and early by removal of the adenoma and attention to the renal complications is reasonably good.

CASE REPORT

HISTORY. B. L., a 33-year-old colored female, was admitted to the University Hospital on 8-14-56 with a chief complaint of back pain of 5 months duration. Two and one-half years prior to admission, while pregnant, she had had "pus in her urine". This subsided with treatment and thereafter she had considered herself well until five months prior to admission when she began, after delivery of a normal child, to have low back pain coupled with suprapubic pain. Associated with this she noted urgency, burning, frequency, and nocturia four or fives times nightly. Symptoms persisted in spite of treatment and she was referred to the University Hospital. On admission she stated that she had lost twenty pounds in weight since delivery five months prior to admission.

Physical Examination was essentially negative. She was a-febrile on admission and admission hemogram was not remarkable. Urinalysis revealed one-plus albuminuria and white blood cells too numerous to count.

Roentgen Examination of the abdomen showed a very large staghorn calculus on the right. (See Figure 2). On the left a smaller stone was identified in the lower calyx. In addition, flecks of calcium noted within the renal parenchyma appeared to indicate nephrocalcinosis. Retrograde and intravenous

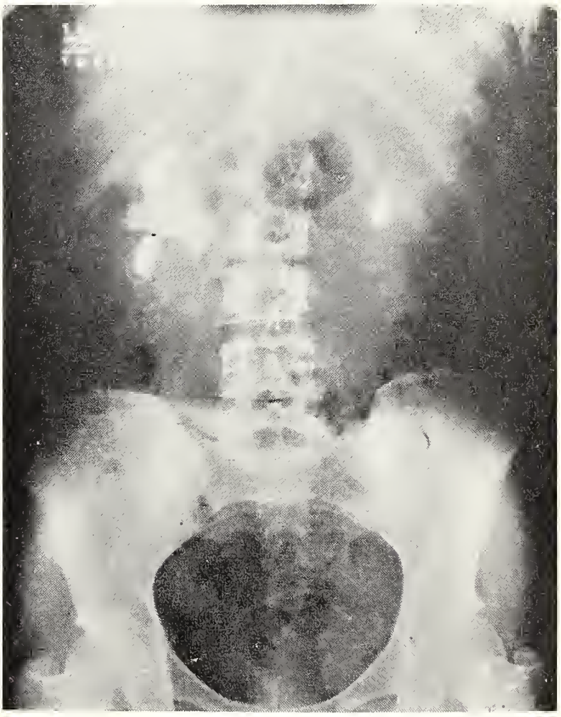


Figure 2. A routine flat film of the abdomen reveals a staghorn calculus on the right side, and smaller calculi on the left. Nephrocalcinosis is more prominent on the left side.

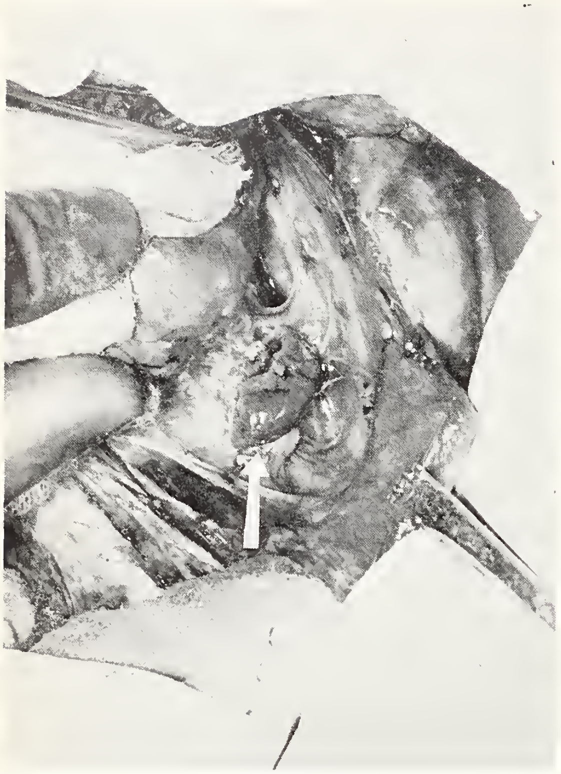


Figure 3. This photograph shows the parathyroid adenoma *in situ* as it appeared at surgery. The adenoma is at the tip of the arrow.

pyelograms confirmed the impression gained from the plain films and, in addition, the right kidney was found to be non-functioning. The N.P.N. determination was 23 milligrams per cent. Serum calcium and phosphorus levels were as indicated in Figure 1. Urinary calcium levels taken on a low calcium diet were as indicated in Figure 1.

On the basis of these serum calcium and phosphorus values a diagnosis of parathyroid adenoma was made.

OPERATION: A routine transverse neck incision was made through the platysma muscle, and the superior flap was elevated sub-platysmally to the thyroid notch. The inferior flap was developed sub-platysmally for a distance of 1 cm. and both sternocleidomastoid muscles were freed from their bed by sharp dissection. The strap muscles were separated in the midline, dissected free from the thyroid gland, and divided between clamps just below their insertion onto the thyroid cartilage. As the left lobe of the thyroid gland was dissected free at the lower pole there was seen a brownish bit of tissue measuring about 1 x 2 cm. (See Figure 3 and 4). This was further exposed and proved to be an adenoma. Exploration of the other side was negative. The wound was closed in layers. Recovery was uneventful.

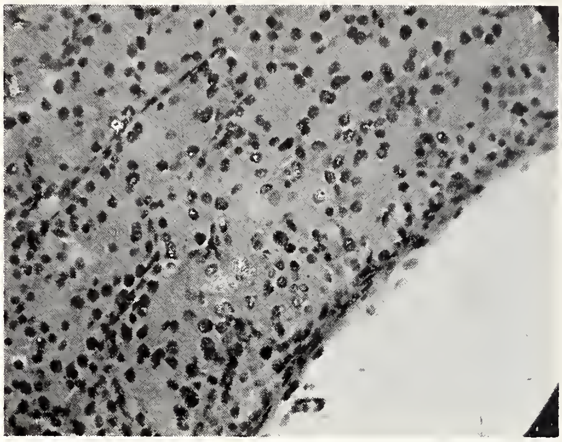


Figure 4. A photomicrograph reveals the uniform cords of eosinophilic epithelial cells interspersed with numerous capillaries and surrounded by a thin fibrous capsule H. and E. x 500.

SUMMARY AND CONCLUSIONS

1. Functioning parathyroid adenomas may be the cause of 10 per cent of all renal stones.
2. The diagnostic features are:
   a. Urinary tract infections associated with renal stones.
   b. High serum calcium and a low serum phosphorus level coupled with high excretion of calcium in the urine.
   c. Infrequent occurrence of osteitis fibrosa cystica and/or generalized demineralization with pathological fractures - - a late occurrence.
3. A case of adenoma of the parathyroid gland is presented.

There is no truer truth obtainable by man than comes of music. —Browning

One ought every day at least to hear a little song, read a good poem, see a fine picture, and, if it were possible, to speak a few reasonable words. —Goethe

All that is beautiful shall abide, all that is base shall die. —Buchanan

MISSISSIPPI ACADEMY OF GENERAL PRACTICE

CLINICAL RESEARCH

The Headquarters Bulletin from AAGP last month contained this announcement: "The report of Board actions in this issue includes approval of a project for Academy members to participate in clinical research carried on by pharmaceutical companies. The Commission on Legislation and Public Policy requests the cooperation of state chapter officers in forwarding names of members of their chapters known to be interested in clinical research. Please forward the names of any such members to the headquarters office, where a list will be compiled.

"This project comes as the result of requests from several pharmaceutical companies for the names of active general practitioners who will be willing to conduct "therapeutic trials" in their practices in various parts of the country and thus give the manufacturers a broad clinical investigation.

"It should be noted that the clinical research project is not to be an official activity of the American Academy of General Practice. In other words, no manufacturer will be able to state that his product has been subjected to clinical studies by an agency of the American Academy of General Practice. Instead, the names of individual physicians willing to participate in such a project will be forwarded to interested manufacturers on request. Academy members participating in such a project will be required to fill out a clinical investigation application to be filed with the Pure Foods and Drugs Administration. The Academy will require also that the manufacturer requesting such a therapeutic trial sign a contract with the Academy in which he will agree to certain conditions. Among these conditions will be a promise not to imply approval by the American Academy of General Practice of the product involved or to otherwise exploit the Academy or participating members in the promotion of the product under study."

Any Mississippi Academy member desiring to participate in this program should notify the Executive Secretary, P. O. Box 1435, Jackson, Mississippi.

UNDERGRADUATE EDUCATION

The July issue of the *Journal GP* features a report on "The General Practitioner in Undergraduate Medical Education". A survey was conducted by a Committee of the Commission on Education to determine the extent of general practice teaching in the nation's medical schools.

The University of Mississippi School of Medicine's Section on General Practice is described in detail. The Mississippi Academy takes justifiable pride in the active role it played in helping to establish this section in our State Medical School.

AAGP COMMITTEES

Committee appointments were announced by the Board of Directors last month. Mississippi representation remains unchanged. Wm. E. Lotterhos of Jackson, was re-appointed Chairman of the Publication Committee; S. S. Kety of Picayune was re-appointed to the Rural Health Committee, and Louis F. Rittelmeyer of Jackson continues as a member of the Joint Residency Review Committee for General Practice.

SEPTEMBER 18-19

That's the time of the Annual Assembly at the Hotel Heidelberg in Jackson. A complete program will be mailed to all members early next month.

President's Page

June 6, 1957, is recorded in the annals of American medical history as a date of high significance: For the first time in 154 years, American physicians substantially altered the canons of morality under which our profession is practiced.

It was on this date that the House of Delegates of the American Medical Association adopted the much-discussed, controversial short form of the *Principles of Medical Ethics,* for three years a *cause celebré* in the highest councils of medical organization. Advocates of the new and shorter form—a document of scarcely more than five hundred words—feel that American medicine has removed the last vestige of moral antiquity from its midst. Still other physicians—possibly an unorganized minority—feel that our highest policy-making body moved too quickly in the alteration of tradition and precedent. This much may be said: The manner and degree of change in the *Principles of Medical Ethics* was examined and debated during five consecutive AMA meetings and every word adopted at the historic June 1957 New York meeting was subjected to study and scrutiny for more than one year.

Efforts to alter the *Principles* in whole or in part have been made during the last decade with regularity. The Council on Constitution and By-Laws of AMA has been consistent in expressing the belief that the old *Principles,* a document as old as medical organization itself, were clumsy and unwieldy. One chief objection made was that the old 4,000-word *Principles* intermingled dicta of etiquette and manners along the vital guideposts for moral conduct. It was argued that uniformly high standards of medical education which have existed through most of the twentieth century obviate the need for such fundamental guides and that little more than confusion was achieved as a consequence of the obsolescence of the document.

At the 1955 clinical session of the AMA at Boston, the Council on Constitution and By-Laws presented a draft, *Principles of Medical Ethics and Precepts of Manners of the American Medical Association.* This was the first bold step toward effecting a separation of morals and manners as relate to the ethical practice of medicine. Though the document did, in fact, categorize its subject matter, it was generally felt to be even more unwieldy than the old *Principles.* Soon afterwards, it became apparent that any new document brought forward must be one relating exclusively to moral pronouncements. Through three meetings of the AMA House of Delegates culminating in the New York session, the short form was carefully considered.

The principal objections voiced against the new document are two: First, a minority of physicians appeared to mistrust its brevity; secondly, a still larger group appear to feel that it is too broad and non-specific. The former contention seems to weaken in the light of debate brought out at New York where it was stated that ". . . even a document of 800,000 words could not possibly cover every situation," but the now-famous utterance of a member of the Mississippi delegation may still raise doubts as to the generalized nature of the document. This piercing, waggish remark, "we may just as well say 'love thy neighbor' " has been quoted in national publications.

The new *Principles* contain a preamble and ten sections. Consistency has been maintained in distinguishing the *Principles of Medical Ethics* from law *per se,* but the new *Principles* are regarded as "standards" rather than "guides" as previously described. The ten sections deal primarily with medicine's goal of service, improvements in knowledge and skills, and scientific attainment; voluntary association with sectarian practitioners or cultists is still a taboo among us.

Physicians are exhorted to uphold the dignity and confidence enjoyed by the profession and to safeguard themselves against members "deficient in moral character or professional competence."

Responsibility to patients, disposition of services or professional attainment, and sources of income constitute principal limitations upon ethical practice. One section alone is given over to the physician-patient relationship in the protection of confidences and a final injunction emphasizes the responsibility of the physician as a citizen and member of society.

More than likely, the legislative and judicial halls of medical organization will continue to echo debates on this monumental change in the best known of all medical documents. Of this, however, there is no doubt: Dedicated, conscientious men decided upon the change and their act of decision can safely be accepted as their deep belief in the need for change and the workability of the new document.

Howard A. Nelson, M.D.
President

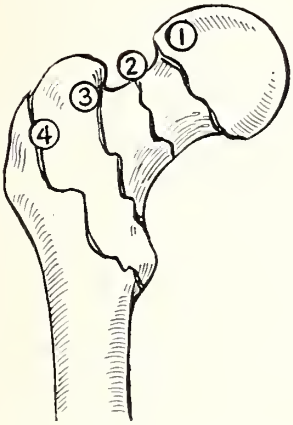
FRACTURE PROBLEMS

by Leslie V. Rush, M.D.

Meridian, Miss.

No. 4 of a series

Hip Region Problems: The Neck

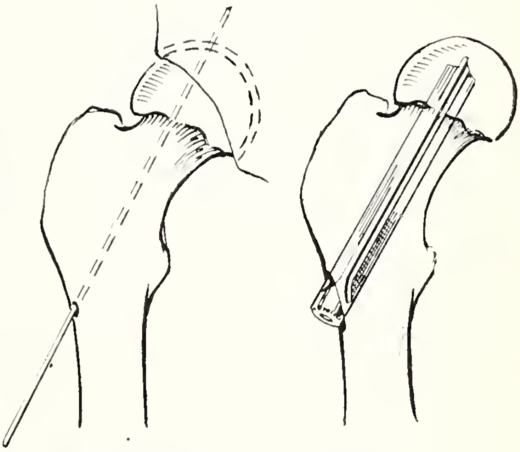


HEALING IN THE VARIOUS REGIONS:

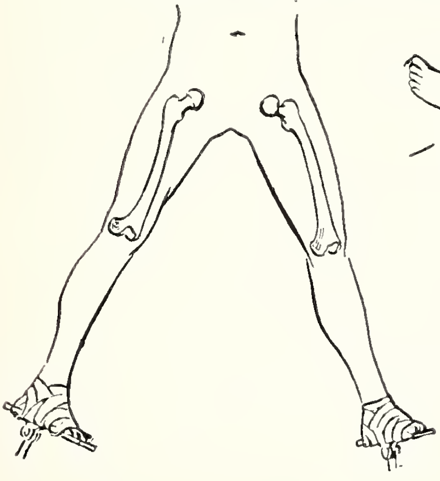
1. Heals poorly. Tends to non-union or aseptic necrosis of head. May ultimately require prosthesis.
2. Heals reasonably well—better blood supply, better fixation.
3. Good healing.
4. Very good healing.

SUBCAPITAL REGION

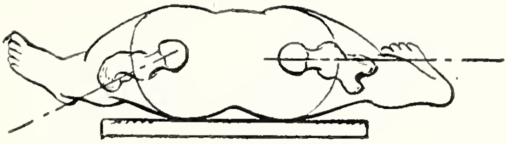
Nail in slight valgus to convert shear to compression. Angle of the nail approaches the vertical for better fixation. Rotation of the head can be controlled by passing guide wire into acetabulum.



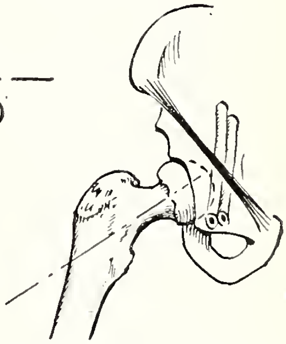
ANATOMICAL LANDMARKS USING WHITMAN'S POSITION



Position: Slight traction, abduction and internal rotation.

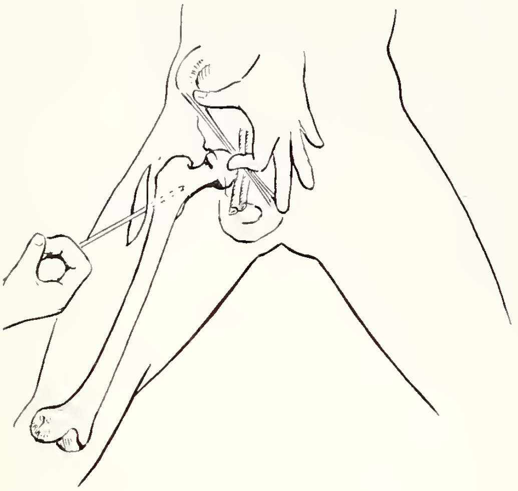


Neck is parallel to table top.

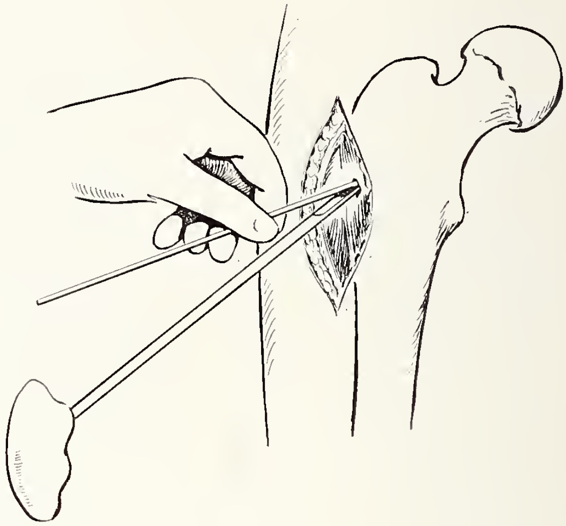


Center of head is midway between anterior superior spine and the pubis and directly beneath the point at which the femoral artery crosses under Poupart's ligament.

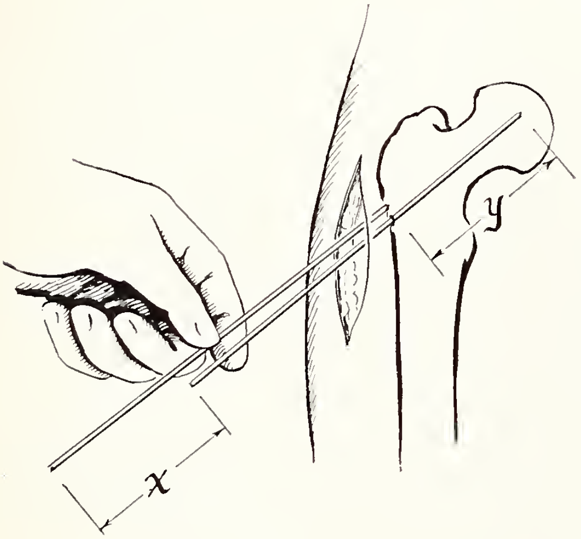
PLACING THE NAIL



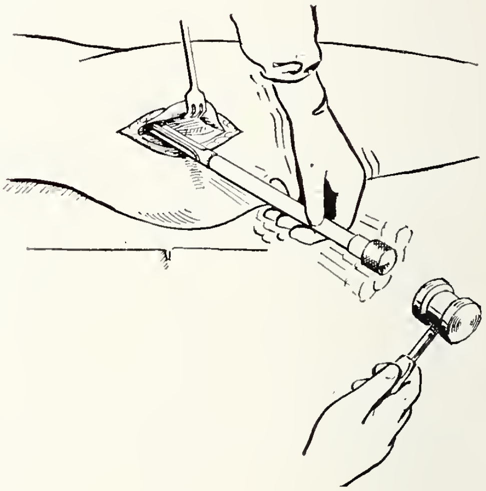
Make opening through lateral cortex with awl reamer introduced parallel to table top and directed toward point where femoral artery crosses under Poupart's ligament, penetrating about one and one-half inches.



Use groove in awl reamer to direct guide wire into position, adjust to proper direction and drive home with gentle taps of the mallet. Sudden increase of resistance usually indicates the acetabulum has been reached.

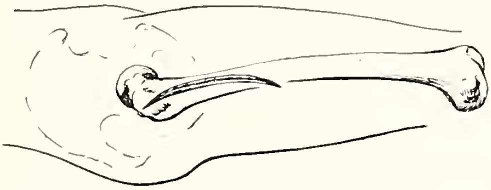


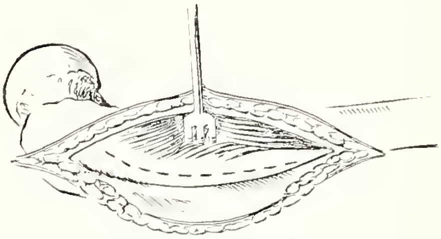
Determine length of nail to be used by measuring with identical guide wire. X=Y.

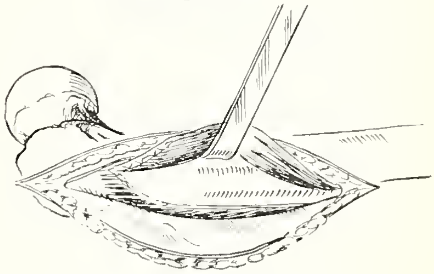


To prevent splitting bone, loosen the nail by manipulation repeatedly as the point is slowly driven through the cortex.

CURVED LATERAL INCISION



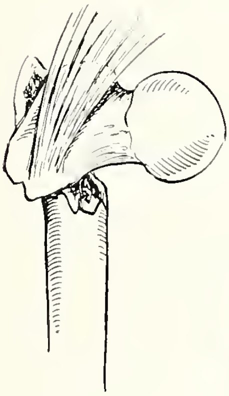


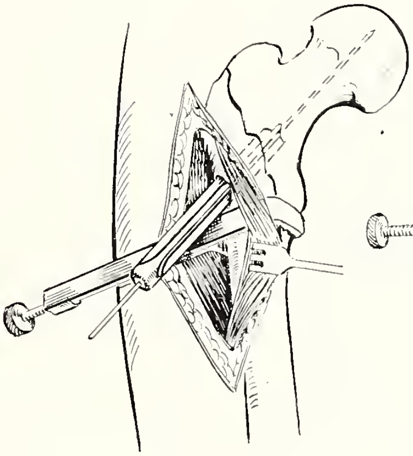


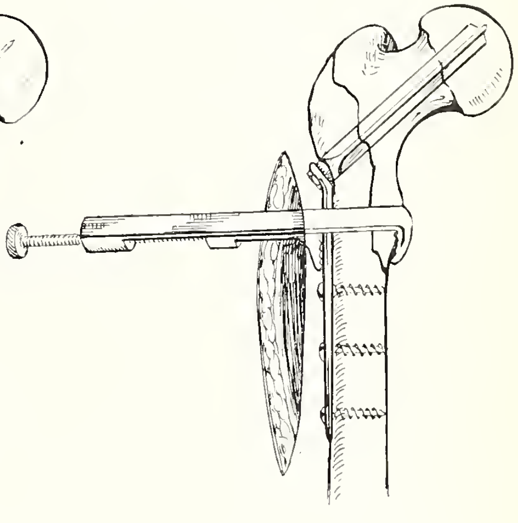
Curved lateral incision: Extends through fascia lata. Simplifies retraction by utilizing gravity. Incise aponeurosis of vastus lateralis near posterior attachment to femur, free muscle from lateral surface of femur, reflecting it anteriorly. This approach is almost bloodless.

DISPLACEMENT, TROCHANTERIC AREA

LESSER TROCHANTER:



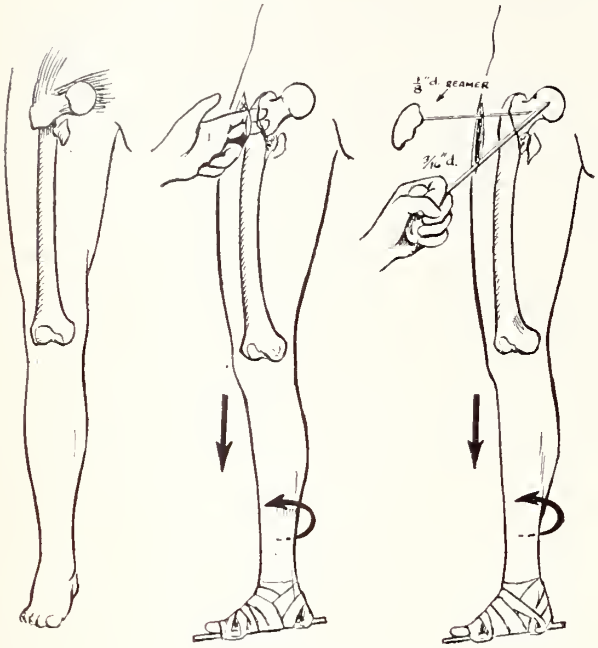




Lesser Trochanter: When present on upper fragment the ilio-psoas flexes fragment violently.

Remedy: Hold in position with bone clamp placed obliquely. Place Smith-Petersen nail. Remove clamp temporarily. Add anchor plate: Replace clamp to hold fragment and plate in position as screws are applied. Position of thigh: neutral as to rotation.

GREATER THROCHANTER



Greater Trochanter: When present on upper fragment with lesser trochanter detached, upper fragment flexes moderately, abducts and rotates externally due to pull of short rotator muscles and the gluteals.

Remedy: Bring the shaft into external rotation. Reduce by leverage and finger manipulation. Hold position by transfixing fracture temporarily with awl-reamer. Apply Smith-Petersen nail with anchor plate.

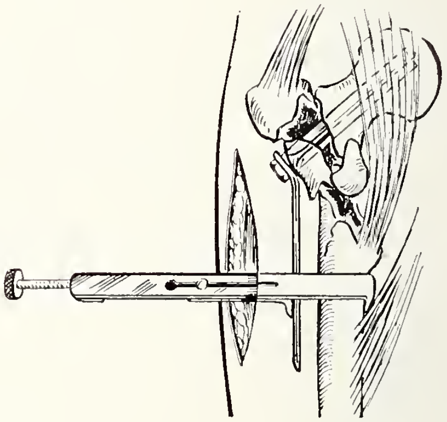
FRACTURES WITHOUT VIOLENT DISPLACEMENT

Best fixed with the thigh in adduction and neutral as to rotation. Wound Closure: Replace vastus lateralis muscle, suture fascia lata.

BAG OF BONES

Proximal fragment not acted upon by muscle pull. Shaft displaces medially by the pull of the adductors.

Remedy: Ignore fragments. Place Smith-Petersen nail in neck using anatomical landmarks as for neck fracture. Attach plate and hold in position with bone clamp, which pulls shaft into position.



Medical School Miscellany

July is the month of unfamiliar faces in any medical center as interns, residents and students go and come and faculty changes occur.

At the University of Mississippi Medical Center, July brought four new assistant professors, 22 interns, 25 residents for a total of 43, plus more than 30 assorted students in the ancillary fields.

The additions to faculty are: Dr. Joseph K. Seale, anesthesiology, Dr. Frederic C. McDuffie, medicine, and Dr. William Gillen and Dr. Gilbert R. Gredler, psychiatry.

Coming to the Medical Center from Western Reserve University where he completed his residency in anesthesiology, Dr. Seale is a Southerner and a graduate of the University of Tennessee School of Medicine. He interned in St. Louis City Hospital and practiced for five years in Mascot, Tenn., before undertaking his residency training. Dr. Seale's particular field of interest is pediatric anesthesiology.

A member of the Department of Surgery, faculty, Dr. Seale replaces Dr. Robert McClure who entered private practice in Houston, Texas.

Dr. McDuffie will head the division on immunology and rheumatic disease in the Department of Medicine. He is a graduate of Harvard Medical School, interned and took his residency at Peter Bent Brigham Hospital. He was a Fellow in Physical Chemistry at Harvard in 1953-54 and a Fellow in Microbiology at Columbia College of Physicians and Surgeons from 1954 to 1956.

A neurologist, Dr. Gillen has just completed a year's training at the Institute of Neurology in London. He received his M.D. degree at the University of Illinois and went to Charity Hospital in New Orleans for his internship and residency. Dr. Gillen's research fields are the theoretical aspects of seizure and the neurochemistry of lipid disease.

The other new assistant professor in the psychiatry department is Dr. Gilbert Gredler, a psychologist who got his Ph.D. degree from the University of Illinois. Dr. Gredler has taught at Berea College and the University of Illinois and was school psychologist for the Canton (Ohio) Board of Education before coming to the University Medical Center.

OTHER FACULTY CHANGES

Dr. William T. Williams, instructor in surgery, resigned effective July 1 to enter private practice in Florida. Dr. William A. Neely, formerly chief resident in surgery, has been appointed instructor in that department. Dr. M. E. Morrison, professor of bacteriology and CLD and chairman of the Department, has left the University to practice in Oxford. New appointments in this department will be announced in August. Dr. George Armstrong, who finished his internship here June 30 while on leave of absence from the Department of Physiology and Biophysics, has returned to the department with the rank of associate professor.

NAMED ASSISTANT DEAN

Dr. Thomas J. Brooks, Jr., Professor of Preventive Medicine and Chairman of the Department, has been named an assistant dean in charge of student affairs in the school of medicine. Dr. Brooks is chairman of the student admission committee.

NURSING EDUCATION

Twenty-four student nurses enrolled in the University of Mississippi School of Medicine degree nursing program at the Medical Center in July. Coming to the Center as sophomores after completing their freshman year in 12 state schools, they bring to nearly 50 the number of student nurses currently studying in the Department of Nursing Education and working in the University Hospital.

MEDICAL TECHNOLOGY

Six women and one man began their 15-month course in the Division of Medical Technology at the University Medical Center in July. Headed by Dr. Warren Bell, with Miss Frances James as teaching supervisor, the division accepts no more than 12 students enrolled in two classes. Six of the seven new "future fact finders" hold their college degrees while the seventh will receive her degree from her parent university when she completes work for the medical technology certificate at the Center.

FIRST LEADERS AWARD

Dr. Talbot G. McCormick, Jr., of Forest was awarded the Leathers Medal at the first Medical School Commencement June 16.

The medal goes to the senior student voted most outstanding by dean and faculty and is given in honor of the late Dr. Waller S. Leathers, first dean of the University of Mississippi School of Medicine. Cash contributions from Dr. Leathers' former students paid for having the medal designed and cast.

Dr. McCormick also won the Mosby award for top scholastic performance in both his junior and senior years. He is interning at the University of Texas Branch Hospital in Galveston.

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $3.00.

Published monthly at 104 Hospitality Street, Booneville, Mississippi. Return postage guaranteed.

W. H. ANDERSON, M.D. .... Editor-in-Chief
MILDRED P. ANDERSON .... Assistant Editor

MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY
C. W. Patterson, M.D. ....President
Rosedale, Miss.
J. Max Roy, M.D. .... President-elect
Forrest City, Ark.
C. L. Chumley, M.D. ....Vice-President
Nashville, Tenn.
Lon E. Reed, M.D. .... Vice-President
Hot Springs, Ark.
R. B. Cunningham, M.D. ....Vice-President
Booneville, Miss.
Thurman Crawford, M.D. .... Secretary-Treasurer
Memphis, Tenn.

Mid-South Associate Editors
H. King Wade, M.D. ....Hot Springs, Ark.
R. L. Sanders, M.D. .... Memphis, Tenn.
Frank M. Acree, M.D. .... Greenville, Miss.

MISSISSIPPI STATE MEDICAL ASSOCIATION
Howard A. Nelson, M.D. ....Greenwood
President
Guy T. Vise, M.D. .... Meridian
President-elect
Geo. W. Twente, M.D. ....Jackson
Secretary
Rowland B. Kennedy ....Jackson
Executive Secretary
State Associate Editors
Louis F. Rittelmeyer, M.D. ....Meridian, Miss.
John T. Bryan, M.D. .... Meridian, Miss.

The Publication Committee is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.

Address all material for publication to W. H. Anderson, M.D., 104 Hospitality Street, Booneville, Mississippi.

§

THE $1500.00 QUESTION

The plight of young Benny Hooper became the subject of concern and discussion in every American household last spring. His miraculous survival and rescue from a 21-foot hole in his back yard on Long Island brought sighs of relief all the way from Portland, Maine, to Portland, Oregon.

A physician played a feature role in this 24-hour-long drama—Dr. Joseph Kris, who stood by during the excavation work, giving oxygen to Benny through a long tube. Without question, this was responsible for keeping the child alive during the tedious procedure of excavation. The doctor was a hero, and all doctors shared the glory of this one member of the profession who so nobly exemplified the highest ideals of our calling.

Later, suddenly, something went wrong. Dr. Kris submitted a bill "for services rendered, $1500.00." National acclaim turned abruptly to national chagrin. A congressman accused the doctor of exacting "a pound of flesh" from the boy's father. Dr. Edwin Hamilton, chairman of the A.M.A. board of trustees, said not one doctor in a thousand would have charged anything for his services. Finally, the Grievance Committee of the county society persuaded the doctor to withdraw the bill.

In all the furor, a few facts were discernible. For one thing, the Hoopers had received contributions for medical expenses, about $400 it was reported. Furthermore, they had given $1000 (from a television appearance) to the Firemen's Relief Fund, "to express their gratitude." A very pertinent point, one that received scant notice in newspaper reports, was that the residents of the area were almost unanimously of the opinion that the doctor was entitled to payment for his services. None of this changes the fact that an exorbitant fee is never justified. It does, however, put the story in proper perspective.

Mr. Hooper's immediate reaction, upon receiving the doctor's bill, was to inform the press that he'd been gouged! He didn't tell the doctor or the county medical society—he told the nation. And the nation didn't like what it heard. The doctor, so recently a hero, was the goat, of his own imprudence and the inevitable "bad press" that followed. And the medical profession, so recently shining in the reflected glory of its colleague, seemed to tarnish overnight.

There should be a lesson in this for all of us. It should be apparent that good public relations is not just a pamphlet or a slogan or a "campaign" out of Chicago. It is every physician doing his duty as a practitioner of the healing art. When he acts in accordance with the ideals of sacrifice and service, the entire profession reaps a reward of gratitude. But when he seems to subordinate service to monetary gain, the profession loses the respect and esteem of its "public".

This advice of Confucius sums up what we're trying to say: "Avoid the very appearance of evil; do not even stoop to tie your shoe-lace in your neighbor's melon patch."

—Louis F. Rittelmeyer

NEW HEALTH BUILDING

The ground-breaking for the new State Health Building was celebrated on July 26 on the University campus in Jackson. This occasion was another historical milestone for health progress in our state. Lieut. Governor Carroll Gartin presided over the meeting. In this capacity he evidenced a fine understanding of health emphasis in our state for the last half century and sensed the big things of the future in this field, aided by this wonderful facility so well located.

Dr. R. B. Caldwell of Baldwyn spoke briefly in fitting words of the service rendered by the state health department and the big part that Dr. Underwood played in it.

Secretary Ladner eloquently expressed appreciation and paid tribute to our health leader who has served so well for 33 years.

Dr. Underwood traced briefly the march of public health in Mississippi for the last fifty years and expressed appreciation for all who had aided him, including governors, legislators, public health officers, members of the medical profession, nurses, heads of his departments and others. Dr. A. L. Gray is now his assistant and doing a fine job of it.

Dean Pankratz was present and he and Doctor Underwood expressed cooperative and cordial relations for the future in the interest of better public health and assured each other that the new health facility would be of mutual benefit.

Many diseases have been conquered in Mississippi within the last fifty years. The future of public health for the next fifty has so many possibilities that we dare not make predictions. The building of health assets and adding to the vigor and efficiency of the population will be one objective. Mental health will be a major consideration.

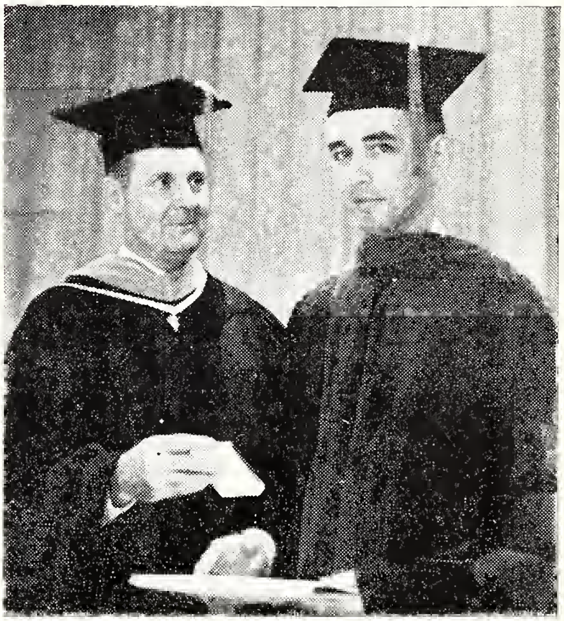
Mississippi has been very fortunate in having such a leader in public health as Dr. Felix J. Underwood. And the cooperation between public health and the medical profession has been very fine. We feel sure that public health, the medical school and the medical profession are going to march in a united effort to give our state the very best in medicine in the future.

Health assets, mental, physical and spiritual, constitute our real riches.

ANOTHER NEW HOSPITAL

Amory is now on the way with a modern Hill-Burton Hospital. This city deserves a good up-to-date hospital and will give it fine support. Amory is a fine town, surrounded by a fine farming section, with a lumber industry and railroad shops. It has been quite outstanding for many years as a medical center. This was the home of the beloved Dr. G. S. Bryan, who always kept his face to the front in the forward march of medicine. We remember well his discussions on cancer and the relation of the mind and the nervous system to physical ailments. He was the first to do an appendix operation in that section. He practiced medicine as a progressive Christian citizen who was always a credit to his town. Dr. W. N. Reed, a member of the Fifty-Year Club, has been a valuable practitioner in Amory for more than fifty years. And Dr. M. Q. Ewing for more than 25 years has been outstanding in surgery in this city. Other good doctors contribute to a fine medical atmosphere which insures success for their new hospital.

RECEIVES LEATHERS MEDAL



Chancellor J. D. Williams (left) presents the leathers Medal to Dr. Talbot G. McCormick, June 16, during the first University of Mississippi School of Medicine commencement. The award goes to the senior student chosen "most outstanding" by the dean and faculty of the medical school.

ANNOUNCEMENTS

Robert A. Dale, M.D., announces the opening of his office for the practice of Pediatrics and Pediatric Allergy, 538 Main Street, Tupelo, Mississippi.

George A. Riley, M.D., announces the opening of his office, practice limited to surgery, at 1085 Madison Avenue, Memphis, Tennessee.

newest study*
cites
3 major reasons
why

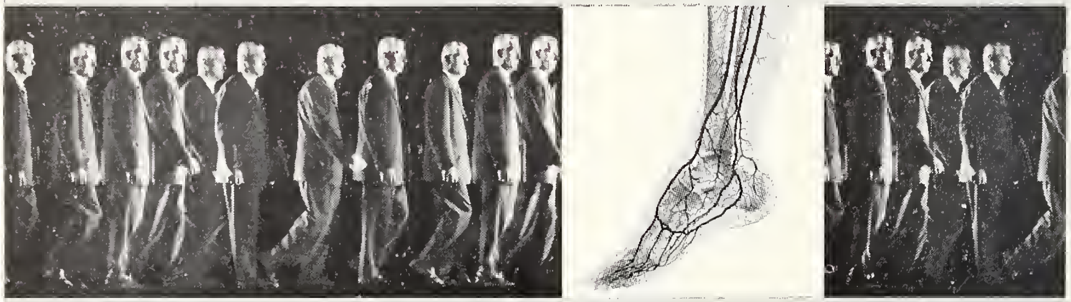
arlidin®

brand of nylidrin hydrochloride N.N.R.

**brings
dependable
relief
where other
drugs fail**

in **intermittent claudication**
of **arteriosclerosis obliterans**
recent thrombotic closure
thromboangiitis obliterans

also effective in
diabetic vascular disease
Raynaud's disease
ischemic ulcers
night leg cramps
cold feet, legs and hands



Arlidin is available in
6 mg. scored tablets and
5 mg. per cc. parenteral
solution. See PDR for
dosage and packaging.

protected by U. S.
Patent Nos. 2,661,372
and 2,661,373.

1 While other drugs improve circulation only in the skin and do little to relieve muscle pain and spasm, Arlidin effectively dilates blood vessels in skeletal muscle — where needed most.

2 While other vasodilators, after their first beneficial effects, have little value in increasing walking tolerance in peripheral vascular disease, Arlidin improves the ability to walk in 2 out of 3 patients for as long as it is administered.

3 Arlidin assures "freedom from side or toxic reactions . . . ease of administration".

*Stein, I.: Annals of Internal Medicine 45:185, 1956.

Sample supply of Arlidin and reprint on request.

arlington-funk laboratories
division of **U. S. VITAMIN CORPORATION** • 250 East 43rd Street, New York 17, N. Y.

Obstruction Pulmonary Emphysema

Watts R. Webb, M.D.†
and Guy D. Campbell, M.D.†
Jackson, Miss.

Obstructive pulmonary emphysema is characterized by the loss of functioning lung tissue in a progressive destructive lesion ultimately leading to total invalidism. In our aging population it is becoming of greater importance medically and economically than any other pulmonary disease. The nonobstructive varieties, such as senile and compensatory emphysemas, consist essentially of only hyperinflation and usually will not be accompanied by serious signs or symptoms.

Emphysema develops as a result of prolonged partial and/or intermittent complete bronchiolar obstruction. The primary initiating cause is bronchial irritability due to any number of specific agents or combination of agents. Thus, pulmonary emphysema is frequently associated with asthma, bronchiectasis, tuberculosis, sarcoid and the pneumoconioses. More important to the general population, however, is its frequent occurrence with "chronic bronchitis" which is so often seen in the younger age groups as the earliest stage of this progressive lesion.

Physiology and Pathology

Pathologically, the lungs become pale and voluminous with multiple blebs and a "cotton candy" appearance throughout. Histologically, the alveoli are dilated, distorted, and fragmented with loss of the alveolar septa and surrounding capillaries. Secondary changes occur in the chest with markedly increased AP diameter, prominent angle of Luis, wide intercostal spaces and low flat diaphragms. Usually there is an associated kyphosis with elevation of the clavicles, characteristic of the posture of the inspiration.

Exhalation which is normally passive as a result of the elastic recoil of the lungs now must be accomplished by active compression of the chest and abdomen. The slowed, incomplete emptying may be compensated in part by prolonged exhalation. The overdistended and inelastic lung traps air in the alveoli and this is increased by coughing or straining. With capillary compression and loss of nutrition, the alveoli are destroyed as are the pulmonary capillaries themselves. This leads to diminished oxygen uptake and retention of carbon dioxide. All of these processes are aggravated by any infection, allergen, or irritant which increases coughing and bronchial irritability.

Initially, function studies may show a normal vital capacity, though later it is reduced. There is a marked increase in the residual volume of air which cannot be evacuated from the lungs by forced exhalation. The expiratory time becomes prolonged with diminution in the maximum breathing capacity. With continuing compression and destruction of the pulmonary capillaries, the vascular bed becomes so small that pulmonary hypertension and, subsequently, right heart failure develop.

Symptoms

In the early stages the only symptoms will be cough, occasional wheezing, dyspnea associated with moderate exertion, tachycardia and vague chest discomfort. Physical examination at this time will usually show no cyanosis or change in chest contour. There may be a pathologic cough with expiratory wheezes and coarse rhonchi. The chest x-ray at this stage may be relatively normal.

With further progression of the disease there are increased cough, wheezing, and dyspnea on slight exertion. There is often a sensation of tightness within the chest and many patients develop spontaneous pneumothoraces. Early changes in chest contour may be noted at this time. Fluoroscopy and x-ray studies show poor diaphragmatic function, areas of local emphysema on expiration and decrease in the vascular pattern of the lungs.

In the final stages of the disease, when the classic findings of pulmonary emphysema are present, marked and permanent changes will have occurred, frequently with the development of cor pulmonale. At this stage the disease cannot be cured though gratifying palliation may be achieved.

Treatment

The major problem is control of bronchial irritation and bronchospasm. We, like many others, have been very strongly impressed with the role of tobacco in producing and continuing the ravages of pulmonary emphysema and, conversely, by the marked improvement that can be achieved by cessation of smoking. Much attention should be devoted to educating the patient regarding the deleterious effects of tobacco. In addition, the patient should be separated from all other external and internal irritants. The bronchial irritability usually responds to antihistaminics, bronchodilating agents and expectorants. Any patient who has had a persistent bronchitis will need prolonged chemotherapy with appropriate antibiotics. Our preference is a broad spectrum antibiotic in full dosage for two or three weeks followed by small daily prophylactic dosages for months or even years. Local obstructive lesions should be removed if possible, and the patient should be kept under observation until all symptoms and signs are eradicated. He must permanently abstain from tobacco.

---

†From the Departments of Surgery and Medicine University of Mississippi Medical Center and Medical Service, Veterans Administration Hospital, Jackson, Mississippi.

Bronchodilators are particularly helpful for episodes of respiratory insufficiency. One of the best is isuprel by nebulization through either a DeVilbiss No. 40 nebulizer or a Medihalor. This is repeated four or five times daily using the least amount that is effective. In severe attacks of acute bronchospasm or asthma, aminophylline intravenously is most effective. Parenteral adrenalin is also quite helpful, but frequent patients (especially asthmatics) are adrenalin resistant by the time they seek medical aid. In those few cases which remain refractory to these methods, intravenous ACTH should be tried for the emergency and therapy continued with the synthetic corticoids.

Expectorants are useful in those cases with tenacious or profuse sputum. One of the best and least expensive is saturated solution of potassium iodide in the dosage of ten drops four times daily. Steam inhalation is also a good expectorant and a well hydrated patient raises secretions with less difficulty than a dehydrated patient. Postural drainage is recommended for those who have profuse sputum.

During severe attacks, the patient may require oxygen. This should be administered with some caution as occasionally the only stimulus for breathing in these patients is hypoxia. If this stimulus is removed, the patient may cease breathing, become comatose and expire. In this situation, artificial respiration with the mask and rebreathing bag of an ordinary anaesthetic machine can be lifesaving.

Aerosol therapy with bronchodilating agents and varidase or trypsin is effective in liquefying tenacious secretions. Intermittent positive pressure breathing is a very useful method of administering oxygen and nebulizing various medicants but the value of the pressure itself is not completely proved.

The normal contour of the diaphragm is a high dome. In emphysema the diaphragm is low and flat; and its muscular contractions, instead of resulting in the descent of the dome, pull on the lower costal margin, thus restricting inspiration. The normal position of the diaphragm can be restored by a pneumoperitoneum or by an emphysema belt (lower abdominal girdle). These elevate the diaphragm to the normal dome position so that contraction can again result in inspiration. This can be demonstrated by placing the patient in front of the fluoroscope and pressing strongly on the lower abdomen to elevate the diaphragm. If the patient can breathe easier and greater descent of the diaphragm is noted, he can tolerate either the emphysema belt or a pneumoperitoneum. If pneumoperitoneum is to be used, small injections of air at weekly intervals are preferable.

Radioactive iodine has had a limited clinical trial for decreasing the overall metabolism of these patients and thereby the need for oxygen intake and carbon dioxide elimination. This appears to be of value in a limited group of patients.

A great deal of investigative work is being conducted regarding the value of sympathetic and parasympathetic denervation of the lungs. These procedures, however, are not yet sufficiently well evaluated for clinical use.

The prognosis in the earlier stages of the disease is excellent even though the patient can rarely, if ever, return to normal once symptomatic emphysema has developed. If, however, the factor of bronchial irritability is not controlled, this disease follows a progressive, irreversible course to total invalidism.

The following two cases are illustrative of the cardinal points of pulmonary emphysema in the young and the old.

Case Reports

I. This 17-year-old boy had pneumonia four times during his preschool years and a fifth attack at age 7 resulted in a chronic productive cough. There have been many subsequent lower respiratory infections associated with high fever, increased cough, wheezing and dyspnea and frequent attacks of asthma.

Physical examination showed a poorly-developed, poorly-nourished boy with clubbing. There were rales over both lung fields and intermittently wheezes and rhonchi. The AP diameter of the chest was increased.

The chest x-ray revealed flat diaphragms, heavy bronchial markings and generalized increased radiolucency, suggestive of emphysema. Bronchoscopy revealed an erythematous velvety mucosa and bronchograms revealed minimal cylindrical bronchiectasis of all lobes. The entire bronchial tree showed the "leafless tree" pattern characteristic of advanced emphysema with almost no lipiodol entering the alveoli.

The patient was placed on a regimen of postural drainage and antibiotics at the onset of any respiratory infection. Bronchodilators and antihistaminics are given as indicated. On this regimen he has improved but is still subject to protracted bouts of bronchitis. Each of these responds to antibiotics, postural drainage and aerosol inhalations of penicillin, alevarie and isuprel. During free periods he may be asymptomatic except for increased fatigability and dyspnea on moderately strenuous exertion.

II. A 67-year-old white man had noted increasing dyspnea for ten years and, during the past two years, he had to stop and pant for breath after only a few steps. He also developed a chronic cough productive of one cup of thick grey sputum daily. Adrenalin spray and cough syrup gave only temporary relief from his cough and wheezing. Dust aggravated his symptoms but no other irritants had been noted. During the past year there had been increased fatigability, anorexia and a 25-pound weight loss. He had smoked a package of cigarettes daily for nearly fifty years. Each evening his ankles would be swollen but there were no other cardiac symptoms.

Physical examination revealed a slender, dyspneic man without clubbing or cyanosis. The neck veins were distended. There was a marked increase in the AP diameter of his chest. The breath sounds were distant and harsh with coarse moist rales throughout. The heart was not enlarged and the sounds were faint. Minimal ankle edema was present. The chest x-ray showed increased bronchial markings and radiolucency throughout. The diaphragms were flat and the cardiac silhouette appeared small. Other laboratory data were normal.

The patient stopped smoking permanently. Broad spectrum antibiotics were given in full dosage for two weeks and in maintenance dosages thereafter. Antihistaminics and bronchodilators were used four times daily. During the initial treatment, he received intermittent positive pressure breathings with aerosol penicillin, alevaire and isuprel.

The response has been very gratifying. The productive cough has almost stopped and wheezing now occurs only on exposure to dust. With continuation of this regime his symptoms have remained and he is able to walk several blocks without difficulty.

Summary

I. Obstructive pulmonary emphysema is characterized by the progressive loss of functional lung tissue.

II. Symptoms are related to "bronchitis" and ventilatory insufficiency.

III. Treatment consists essentially of preventing bronchial irritation.

Poisoning by the Organic Phosphorus Insecticides*

JAMES C. RICE, Ph.D.
Jackson, Miss.

INTRODUCTION

In an appraisal of the comparative toxicities of commercial products, Gosselin[1] places modern agricultural and other insecticides in the categories, extremely toxic and supertoxic, on a scale of increasing toxicity to man graded as follows: practically non-toxic, slightly toxic, moderately toxic, very toxic, extremely toxic, and supertoxic. Of necessity many persons in this state will be exposed to the dangers of these pesticides.

In spite of the fact that pesticides contribute impressively to morbidity and mortality figures for all poisonous materials, the problems posed by accidental insecticide poisoning have not received the attention which is their due. The fact that the reported cases of insecticide poisoning must certainly be only a small fraction of those encountered by the practicing physician is clearly not due to remissness. The discrepancy exists because the need to report all toxic episodes with insecticides has not been properly communicated to the busy doctor.

In the years 1946 through 1953, 732 deaths from pesticides are listed in a personal communication from Moriyami to Conley[2]. Deaths attributable to arsenic, a traditional insecticide, comprise about half of these fatalities. Deaths from the organic phosphorus insecticides (the phosphate esters), the materials with which our account deals, began to be reported as early as 1949. They continue to be reported at the rate of about seven per year. Because the figures are derived from reported causes of death as required by law, they must indicate rather faithfully the facts as they concern recognized deaths from insecticides.

The urgency of the need for proper dissemination of information about poisoning by insecticides prompts the United States Public Health Service, P. O. Box 769, Savannah, Georgia, to request that all cases of poisoning with any insecticide, no matter how mild, be reported to the agency[3]. The reports thus gained by the Public Health Service would be of great value to that agency in the compilation of its valuable booklet, "Clinical Memoranda on Economic Poisons"[3]. Case history forms are also available to physicians on request at the Savannah agency.

The newer insecticides can be divided chemical-

---

†Professor of Pharmacology and Chairman of Department of Pharmacology, University of Mississippi School of Medicine, Jackson, Miss.

*Prepared at the request of the Committee on Rural Health, M.S.M.A., who thank the writer and the University of Mississippi School of Medicine. The valued assistance of S. K. Johnson, M.D., Palahatchie, Mississippi added much to the preparation of this article.

ly into two groups: the chlorinated hydrocarbons (of which DDT is an example) and the organic phosphorus insecticides, with which this article deals. Poisoning by vehicles such as kerosene and xylene, in which certain insecticides are on occasion dissolved, adds an additional source of concern to public health officials. Poisoning by such vehicles is sometimes as dangerous as poisoning by the materials dissolved therein.

THE ORGANIC PHOSPHORUS INSECTICIDES: These agents are toxic not only to insects but also to man and other mammals. Our emphasis will be placed on the clinical implications of poisoning by agents in the organic phosphorus group. Fortunately, members of this group of poisons behave similarly, and poisoning with any member is managed in identical fashion. The organic phosphorus insecticides are marketed under trade names, a partial list of which is supplied below with comparative toxicities[2] for man under prevailing circumstances of exposure and use. In Mississippi, agents used to protect cotton against all its enemies are our chief concern.

Agent	Comparative Toxicity	Some Uses
Chlorthion	moderate risk	roaches, adult and larval mosquitoes, flies
Demeton (Systox)	moderate risk	for pests destructive to cotton, ornamentals, seed crops, and a few food plants
Dipterex	moderate risk	for pests of fruit, vegetables, and ornamentals; fly control
Diazinon	moderate risk	fly bait
Parathion (Alkron, Genithion, Niran, Thiophos, Vapophos)	high risk	insects encountered in agriculture, nurseries, and greenhouses.
Tetraethylpyrophosphate (TEPP, Tetron, Hexamite, Bladex, Fosvex, Nifos)	high risk	mites, soft-bodied arthropods
Malathion	moderate risk	pests of fruits, vegetables, and ornamentals
Methylparathion	high risk	boll weevil
Guthion	too early to state	boll weevil

The organic phosphorus insecticides possess one trait in common. They inhibit the enzyme cholinesterase in what is essentially an irreversible manner. They are called anticholinesterase agents. As a result of their presence in the body, acetylcholine is no longer hydrolyzed with that speed necessary to permit the exercise of its highly important physiological function, which is transmission of the nervous impulse at autonomic ganglia, at parasympathetic endings, at myoneural junctions of voluntary muscles and at the synapses of the central nervous system. In consequence, acetylcholine attains massive concentrations at all the important sites of its action. To function properly it must appear alternatingly in small and high concentration, and especially so at the myoneural junctions of striped muscle. The consequences of the presence of large quantities of unhydrolyzed acetylcholine at the proper sites leads to serious dysfunction of the parasympathetic system, the neuromuscular system and the central nervous system. The functions of the sympathetic nervous system are also deranged, but the derangements tend to be masked by the aberrations in parasympathetic activity. Schematically, what happens during poisoning and its antidoting by atropine follows:

1. Acetylcholine + H_2O Cholinesterase—Acetic Acid + Choline
2. Acetylcholine + H_2O Poisoned cholinesterase —Acetylcholine
3. Atropine prohibits entrance of the accumulating acetylcholine into certain functional cells. Consequently, it is at least a partial antidote for poisoning by anticholinesterase agents such as the insecticides herein described.

DIAGNOSIS: In the following table the more characteristic signs and symptoms of poisoning in man by all of the organic phosphorus insecticides are listed. Severity of the symptomatology depends on the extent of poisoning or the degree of irreversibility of action of the agent. Generally speaking, the manifestations are listed in the order of their appearance.

Signs: 1. sweating; 2. miosis (or even mydriasis); 3. tearing; 4. salivation; 5. pulmonary edema; 6. papilledema; 7. cyanosis; 8. uncontrollable muscle twitches; 9. convulsions; 10. coma; 11. loss of reflexes; 12. loss of sphincteric control.

Symptoms: 1. headache; 2. giddiness; 3. blurred vision; 4. weakness; 5. nausea; 6. diarrhea; 7. cramps; 8. discomfort in chest; 9. nervousness.

An analysis of the foregoing symptomatology indicates at once that it is not easy to distinguish between poisoning with the organic phosphorus insecticides and such entities as heat stroke, heat exhaustion, gastroenteritis, and pneumonia or other severe respiratory infections. In a case of mild poisoning it is easy to confuse poisoning caused by organic phosphorus insecticides with asthma. Indeed, the manifestations of fright, especially in individuals who have seen others poisoned, can easily be mistaken for symptoms of intoxication with the organic phosphorus insecticides.

In the case of acute poisoning with organic phosphorus insecticides, one is confronted with the need to make prompt decision and often to act without the aid of a proper history. Such poisoning can be a medical emergency of the gravest sort, a situation which permits no time for a search for some highly specific antidote or transportation to a hospital. The emergency must be managed immediately. If the subject is known to have been exposed, the presumption of poisoning is high. If he is a child who has had the run of areas where the agents have been employed or stored, poisoning is likewise highly suspect.

If a worker with insecticides has had the advantage of determinations of plasma and erythrocyte cholinesterase from time to time, diagnosis becomes much easier[7], provided the acuteness of the situation does not deprive the physician of access to the facts. Because subclinical intoxication is suspected of producing accidents distinct from those observed during over poisoning, the need for studies of plasma and erythrocyte cholinesterase levels in persons chronically exposed to organic phosphorus insecticides is becoming truly urgent. For example, it is quite possible that "crack-ups" of dusting airplanes may be attributable to the effects of sub-clinical poisoning of pilots by the insecticides encountered. Precise determinations of cholinesterase are time-consuming and facilities for laboratory studies are not always easily accessible. It is hoped that centers for the determination of cholinesterase levels in chronically exposed persons will soon be easily available in all areas of this state.

Poisoning with organic phosphorus insecticides elicits no infallible group of pathognomonic signs. Overactivity of the parasympathetic system would seemingly lead to pin-point pupils in every case. Unfortunately, patients who needed the antidote have occasionally been denied atropine because miosis was lacking or indeed because mydriasis was present. Occasionally the appearance of miosis is delayed. The presence of mydriasis is understandable if severe central hypoxia or extreme anxiety exists. The expected bradycardia, which together with AV block and dissociation, inversion of the T wave, and nullification of the P wave is characteristic for experimental animals, is not found in most case reports. As a matter of fact, a fast pulse and elevated blood pressure seem to be standard human responses to the poisons.

The accumulation of fluid in the pulmonary tree is to be expected and it must be dealt with posturally or otherwise until atropine in the presence of adequate circulatory activity can nullify the accumulation. Oxygen is indicated just as it is in any case of pulmonary edema.

ABSORPTION: There are three avenues of absorption of the organic phosphorus insecticides: the gastrointestinal tract, the lungs, and the skin. The agents enter the lungs as particles rather than as vapors. Since we are concerned only with the effects of toxic or slightly sub-toxic concentrations of the agents, it is actually not necessary to make distinction between the degree of absorption through the portals of absorption. Suffice it to say that toxic concentrations can be absorbed through any one of the three avenues. The relation of the avenues to the habits and activities of the contaminated or poisoned subject leads, however, to certain propositions which should challenge persons interested in the toxicology of the agents and involved in their use.

Danger may be encountered by anyone coming in contact with the organic phosphorus insecticides from the moment of synthesis in the factory until delivery to the soil and plants. Workers in factories producing the agents can acquire toxic concentrations through the skin, the lungs, or even by mouth in the case of poorly informed unfastidious persons. Full protective clothing including rubber aprons or coveralls, rubber gloves (latex rather than synthetic) and rubber footwear are mandatory. It is not possible to avoid pulmonary absorption in closed areas unless ventilation is good. Obviously protective clothing should be washed daily and the worker should shower after completion of work and wash hands frequently. Contaminated clothing should be excluded from the worker's home.

After formulation and packaging, the dangers to workers tend to diminish unless packages in transit are broken. The danger on such occasions is generally from dermal absorption but in the case of untidy uninformed workers even the danger of oral contamination exists.

During the application of the agents to plants or soil by spreading either by machine or otherwise, the danger of contamination is much diminished if application is made out of doors and the advantage of prevailing winds utilized. In closed greenhouses or in lathhouses the danger of poisoning is greater.

Crop dusting pilots are exposed both to pulmonary and dermal contamination depending on the arrangements made for transporting and dispersing the materials while aloft. Some pilots are known to have experienced subclinical poisoning as evidenced by histories of diminution in cholinesterase levels. Accidents to others who have crashed for unknown reasons but whose cholinesterase levels had not been previously scrutinized by laboratory tests may be presumed to be the result of physiological changes during subclinical poisoning. In any case, dusting pilots should be guaranteed the additional safeguard of periodic determinations of plasma and red-cell cholinesterase.

Implicit in what has been stated is the proposition that contamination with organic phosphorus insecticides may be either acute or subacute to chronic. Contamination with an additional dose of an organic phosphorus insecticide can convert subacute or chronic poisoning into acute poisoning. In the sense that phosphorus insecticides progressively inactivate cholinesterase, these agents are cumulative poisons.

TREATMENT: The treatment of severe poisoning with organic phosphorus insecticides is simple but heroic. When one remembers that the antidotal drug employed, atropine, is cause to compete with a natural antagonist, the insecticide, it becomes clear that the treatment is not so heroic as the large dose of atropine recommended would suggest. In severe poisoning, the ultimate threat to life is respiratory paralysis, and its management takes top priority over other measures of treatment. Its cause may be either poisoning of the central nervous system or poisoning of myoneural junctions of striped muscle, or both.

Atropine is apparently not a competent antidote against paralysis of the myoneural junction, but it is useful against the effects of poisoning of the parasympathetic nervous system and possibly the central nervous system. Such being the case in severe acute poisoning, a grave medical emergency where time is of the essence, one is forced first to ventilate the subject by employing artificial respiration, preferably by mechanical means. The presence of cyanosis discloses the respiratory embarrassment. Oxygen, under slight positive pressure, is also acceptable. It is improper to give atropine until respiratory embarrassment is relieved, because the drug in the recommended dose causes additional respiratory depression. In any case, the patient must be properly ventilated. It may be necessary to supply ventilation periodically for as long as 48 hours, during which time enough fresh cholinesterase in the central nervous system will be synthesized to cause remission of symptoms and the termination of the emergency. Sequelae are not encountered. To make complete restitution of red cells cholinesterase takes much longer—say about three months. The order of procedure in the management of poisoning is extremely important. If the patient is in profound respiratory distress, the order of procedure runs like this[3]:

1. Artificial respiration — The emergency respirators carried by fire and police departments are effective. If they are not available, and they will not always be, artificial respiration by thhe Eve Rocking[5] and the Holger-Nielson[6] methods are recommended by Hamblin and Golz[4]. If the procedures involved do not interfere with the proper application of artificial respiration, it is permissible for an assistant to carry out step 3 simultaneously.
2. Atropine, 2 mg. intravenously in the adult (3 H.T., grains 1/100), as soon as the need for artificial respiration as disclosed by cyanosis is overcome. Some observers recommend a larger dose initially. The dose of atropine initially employed can be repeated at 5 to 10 minute intervals until the signs of full atropinization appear. These are the dry flushed skin, the mydriasis, and the tachycardia of atropine action, provided bradycardia pre-existed. These responses are all maximal in eight minutes. The drug can then be given each hour or even oftener in grave extremity, until as much as 20 mg. a day in the adult has been given. Remember that a person poisoned by an organic phosphorus insecticide has an enlarged tolerance to atropine.

3. Decontaminate the skin if contamination is dermal and empty the stomach if it is oral after the completion of Steps 1 and 2. Only then does one concern himself with procedures less pressing than those listed in these steps. The physician must always protect himself meticulously against dermal contamination. Soap and water remove the agents efficiently. Sodium bicarbonate or sodium carbonate encourages their destruction by hydrolysis. Note that the areas below fingernails and toenails must occasionally be decontaminated.
4. Treat symptomatically and supervise carefully and continuously for at least 48 hours. Any patient to whom it is necessary to give the large doses of atropine recommended must not be sent home, not because of dangers inherent in the therapy with atropine, but because that therapy implies the existence of a grave medical situation and the need for its close supervision. During supportive treatment or at any time during the course of the intoxication, morphine and theophylline-ethylenediamine (aminophylline) are absolutely contraindicated. The reasons for the exclusion of morphine are its respiratory depressing and broncho-constricting actions. Theophylline-ethylenediamine, a drug which is useful in the management of bronchial asthma and pulmonary edema, possesses, together with its bronchodilating properties, the ability to stimulate the central nervous system and the myocardium. In the presence of non-convulsive doses of certain anticholinesterases theophylline can elicit convulsions whose control would require judicious management with barbiturates. Furthermore, to challenge with a myocardial stimulant a heart embarrassed by the extreme vagal action of the insecticide is to invite further difficulties in rate and rhythm.

Experimental studies are under way to provide a better antidote than atropine or one supplemental to it. The theoretical background for the production of such an agent is firmly laid but the researches are not complete. It will probably be necessary to use such an agent in conjunction with atropine[8].

It is interesting to note that 80,000 formulations of pesticides (including insecticides) are being used in the United States[2]. Over 200 chemical agents are used in these formulations which take the final form of sprays, wettable powders, emulsions, emulsifiable concentrates, dusts of varying percentage strength, solutions, baits, aerosols and other forms. Obviously, the physician cannot cope with all the problems which such a multiplicity presents without assistance from society in general. Now that the growing season is here, it seems appropriate that the following goals be reached by the appropriate persons:

1. The education of the public to the existence of hazards of poisoning by any insecticide and especially by the organic phosphorus agents because they are so potent,
2. The education of the public to ways and means of preventing poisoning with the agents,
3. The clear and early recognition of poisoning by the phosphorus insecticides and other agents,
4. The knowledge by the physician of methods of management of intoxication by insecticides,
5. The institution of centers which are prepared to run proper determinations of the cholinesterase levels of plasma and erythrocytes.
6. The transmission of reports of all cases of poisoning to the proper agency. In the South the agency is the Communicable Disease Center, U.S. Dept. of Health, Education and Welfare, P. O. Box 769, Savannah, Georgia.

BIBLIOGRAPHY

1. Gosselin, R. E.: How Toxic Is It? J.A.M.A. 163: 1333, 1957.
2. Conley, B. E.: Incidence of Injury With Pesticides. J.A.M.A. 163: 1338, 1957.
3. Clinical Memoranda On Economic Poisons — Apr. 1, 1956 — Technical Development Laboratories, Laboratories Branch, Communicable Disease Center, P. O. Box 769, Savannah, Georgia (This booklet should be in the hands of everyone interested in the toxicology of pesticides.)
4. Hamblin, D. O. and Golz, H. H.: Parathion Poisoning — A Brief Review: Ind. Med. And Surg. 24: 65, 1955. The article can also be found in "Phosphate Ester Insecticides", a booklet available from American Cyanamid Company, New York, N. Y. (This booklet is invaluable to workers interested in problems of pesticides.)
5. The Merck Manual, p. 1437, 9th Edition, Merck & Co., Inc., Rahway, N. J., 1956.
6. Ibid., p. 1435.
7. Michel, H. O.: An Electrometric Method for the Determination of Red Blood Cell and Plasma Cholinesterase Activity. J. Lab. Clin. Med. 34: 1564, 1949.
8. Wills, J. H. et al. Pyridine-Aldoxime Methiodide and Poisoning by Anticholinesterases, Science 125: 743. 1957.

Uterine Rupture*

GARTH L. JARVIS, M.D.
Galveston, Texas

Uterine rupture usually is understood to mean rupture of the uterus during the period of pregnancy the fetus is considered viable or during labor and delivery. This usage eliminates those cases where there has been traumatic perforation during abortions or curettage and those due to cornual pregnancies that frequently perforate during the third trimester of pregnancy.

The subject of uterine rupture is very important today because it is one of the leading causes of maternal mortality and fetal loss. Recently in reviewing ninety-nine maternal deaths occurring in the State of Texas in 1955, it was found that four of these were in cases of proved uterine rupture and there were ten other cases in which the cause of the fatal postpartum hemmorrhage was unknown. It is safe to assume that at least some of these probably had partial or complete ruptures, had autopsies been done. Reviewing reports from other Maternal Welfare Committees reveal much the same situation, with many cases of rupture uteri being the direct cause of the fatal hemorrhage. Many times the rupture is not diagnosed or even suspected until the autopsy was done. This is true in one of the fourteen cases reported today.

The incidence of uterine rupture is very difficult to determine, even though it is the cause of about five per cent of all maternal deaths. Reports indicate it occurs probably in one out of every two thousand pregnancies, but in most of the hospitals where reports have been made, there is a high incidence of severe and complicated cases referred to them and hence the incidence reported does not represent a true over-all rate. In the series at the University of Texas Medical Branch Hospital in the ten year period from 1947-1956, there were 14 cases of rupture in 12,817 deliveries. This is 1 in 916 deliveries or 0.11 per cent. But in our situation, about half of the cases were referred in because of the fact that the patient was already in trouble or rupture was suspected.

In attempting to find the various causes of uterine rupture, and try to find a solution, it is necessary to group the patients into some type of classification. There have been many of these classifications presented but the one we prefer in making our studies is to divide the patients into two groups, according to when the rupture occurred, one during pregnancy and the other during labor and delivery. These are further subdivided into groups with previous cesarean section or operations such as myomectomies, rupture of intact uterus or traumatic rupture. By grouping the cases in this way, it is much simpler to find a common ground for comparison and study. In our series of 14, if we divide them as to this classification, we find the following:

- Rupture during pregnancy
  - Previous cesarean section (4)
  - Intact uterus (1)
- Rupture during labor or delivery
  - Previous cesarean section (7)
  - Intact uterus (1)
- Traumatic rupture (1)

In our series, as in most series, the incidence of rupture is much higher where there has been a previous cesarean section. This has given rise to the dictum of many physicians and in many clinics that "Once a cesarean, always a cesarean". In our clinic this is not followed, but in all cases where we know who has done the previous section, in which there is no palpable defect in the pregnant uterus as it is palpated abdominally, and the same obstetrical indication for the cesarean is not present; then we allow our patients to go into labor as our indication that the fetus is as mature as we can get it. These patients are then allowed a trial labor under careful observation and a vaginal delivery accomplished in many cases, but we are always prepared to do a cesarean section if it is felt advisable at any time. It is because of this policy that most of the cases of uterine rupture, where there have been previous cesareans, have occurred after the patient has started labor.

Certainly there are serious complications that can occur in attempting vaginal deliveries after a previous cesarean, and to go into this discussion would be a subject unto itself. My mention of our policy was merely to explain the higher incidence of rupture in patients who were in labor.

We feel that the incidence of rupture of the classical scar is higher and the maternal and fetal mortality greater than in the low cervical section. This is very difficult to prove, largely because

---

†Chairman and Professor, Department of Obstetrics and Gynecology, University of Texas Medical Branch, Galveston, Texas.

*Presented before the Section on Obstetrics and Gynecology at the eighthy-eighth annual session of the Mississippi State Medical Association, Jackson, May 14-16, 1957.

of the fallacy of many physicians that a section through the lower portion of the uterus is done in the passive segment. This is not true in most cases one might review. Physiologically, the passive segment is produced after labor has been in progress, and therefore the safer passive segment incision can not be done when there has been no labor. So in reality, in most cases, the low cervical sections described are actually done through the active or more muscular part of the uterus, and it is just a question of where the active segment is cut. We feel that a section done through the passive segment, anatomically and physiologically, lends itself less likely to rupture than either a low or high active segment scar. Actually very few physicians, if any, do the original classical section which was almost a fundectomy. It is also almost impossible to do a longitudinal incision (Kerr technique) without cutting into the active segment and hence it would be necessary to do a low transverse incision (Kronig technique) in order to do a true low cervical or passive segment section. It is because of this confusion in terminology in many cases that makes it impossible to determine the incidence of rupture in the two types of sections. In this series of ruptures in cases of previous cesareans, only one was in a passive segment scar.

Rupture of a scar from a previous myomectomy is very rare, but many occur and therefore, these cases must be carefully watched and treated with caution. Probably the incidence of rupture of a myomectomy scar where the incision was through the myometrium down to the endometrium, would be about the same as with a cesarean section scar.

Spontaneous rupture of the intact uterus prior to labor is exceedingly rare. Many cases have been reported and usually follow the occurrence of trauma or infection, such as curettage, manual removal of placenta, sepsis, etc.

Spontaneous rupture during labor is rather common and usually occurs in the lower uterine segment, usually in the grand-multiparous patient. Many are associated with pelvic abnormalities, or malpositions of the heads, leading to mechanical obstruction of some degree.

Traumatic rupture due to external force is not common, but with the increase in automobile accidents, plane crashes, etc., where there may be a sudden severe sharp blow, there may occur a tear at the site of the trauma. Traumatic rupture from manual removal of the placenta, instrumental deliveries improperly conducted, etc. The known incidence of this type of trauma might well be greater if in all cases of maternal deaths autopsies were done.

I would like to present the following cases and then discuss prognosis and possible prevention.

Case No. 1; 12160-G; 1950 - 23-year-old colored female - 4 pregnancies

The patient had had a cesarean section with her first pregnancy, with a viable infant, indication unknown. The next two pregnancies were vaginal deliveries with viable infants. With the fourth pregnancy, the patient was in the thirty-seventh week of her pregnancy, when she developed sudden abnormal pain after lifting a tub of water. Her physician hospitalized the patient and treated her for peritonitis. Two weeks later she was admitted to the University Hospital where a diagnosis of possible ruptured uterus was made. This was confirmed on exploratory laparotomy. A macerated dead fetus was found, and a hysterectomy was done.

Case No. 2; 14154-G; 1953 - 22-year-old colored female - 4 pregnancies.

The first two pregnancies terminated with viable infants, following vaginal deliveries. The third pregnancy was cesarean pregnancy and was done for severe bleeding for an 80 per cent placenta previa with a viable infant. During the thirty-eighth week of the fourth pregnancy, the patient was washing clothes when she developed a sudden abdominal pain. She was brought into the hospital in shock and was taken directly to the operating room. The placenta and dead fetus, with intact membrances were found free in the abdominal cavity. A hysterectomy was necessary.

Case No. 3; 9940-F; 1949 - 20-year-old colored female - 2 pregnancies

The first pregnancy was terminated with a cesarean section after 62 hours of labor, and a viable infant was obtained. During the thirty-eighth week of the second pregnancy, the patient was admitted with a diagnosis of abruptio placenta, and a small dead fetus. The patient was under observation for a possible vaginal delivery if labor ensued, when on the second hospital day she developed a sudden abdominal pain and signs and symptoms of shock. An exploratory laparotomy was done, and there was a ruptured uterus through the old scar and a dead fetus. A hysterectomy was necessary.

Case No. 4; 7863-B; 1952 - 34-year-old colored female - 5 pregnancies

Four previous pregnancies terminated in vaginal deliveries, the babies weighing from five to eight pounds. With the fifth pregnancy, the patient went into normal labor, had a frank breech presentation. No F.H.T. were heard just prior to taking the patient to the delivery room. As the aftercoming head was delivered, there was a loss of approximately 2000 cc's of blood with immediate severe shock with no evidence of peripheral circulation. Fluids, plasma and blood were started. As the blood pressure became evident at 60/0, there was further vaginal bleeding. Therefore, an attempted manual removal of the placenta was done. In doing so, the uterus was perforated. Immediate exploratory laparotomy and hysterectomy were done, but the patient expired before completion. Stillbirth, with a dead mother, diagnosis of placenta accreta and a traumatic rupture of the uterus. There were no lacerations to account for the bleeding. This occurred in the fortieth week of pregnancy, and the death was due to hemorrhage, apparently from a ruptured vessel on the placenta, rather than from the traumatic rupture of the uterus.

Case No. 5; 7445-E; 1948 - 34-year-old colored female - 6 pregnancies

This patient had four previous normal vaginal deliveries and one abortion. The patient had severe hypertension. She developed abruptio placenta at thirty-third week with severe vaginal bleeding on the way to the hospital. She died within six hours after admission to the hospital. Abruptio placenta with a ruptured uterus was diagnosed on autopsy. This was a dead mother and a dead infant.

Case No. 6; 3675-C; 1954 - 35-year-old colored female - 5 pregnancies

Four vaginal deliveries. Average weight of infants — 6¼ to 8½ pounds. This patient, in the thirty-sixth week of pregnancy with spontaneous normal labor for 5½ hours. The cervix was fully dilated, the position was in LOT, station 0 when contractions stopped and F.H.T. were lost. The patient was taken immediately to the delivery room where a forceps rotation and extraction was done on a dead fetus. There was moderate bleeding. Internal palpation of the uterus revealed a rupture. Exploratory laparotomy was done and a hysterectomy was necessary.

Case No. 7; 14090-K; 1956 - 20-year-old colored female - 4 pregnancies

This patient had three previous C-sections for cephalo-pelvic disproportion. Onset of labor at 3 A.M. She was admitted to the hospital at 1:45 P.M. in vigorous labor and suprapubic tenderness. Cesarean section was done 50 minutes later and a viable infant weighing 8 lbs. 11 oz. was delivered. Upon opening the abdomen, it was found that the defect in the uterus was covered by the bladder flap. This patient had been sent in from out of town, and the patient did not know her expected date of confinement or the date of her last period. On the basis of the weight of the baby, it would be judged that this patient was in the 40th week of pregnancy.

Case No. 8; 18454-K; 1955 - 18-year-old colored female - 3 pregnancies

The first pregnancy terminated in a C-section—viable infant, 7 lbs. 11 oz. The second pregnancy—During the thirty-fifth week the second pregnancy was terminated with a C-section at which time there was herniation of membranes through the ruptured scar. The scared edge of the uterus was incised, the uterus was closed. This rupture followed one hour of mild labor. There was a viable infant of 6 lbs. 13½ oz. The third pregnancy terminated in a C-section during the fortieth week of pregnancy with a 6 lb. 15 oz. viable infant. No evidence of defect in the uterine scar.

Case No. 9; 13898-E; 1952 - 27-year-old white female - 5 pregnancies

The first pregnancy terminated with a vaginal delivery with a 10 lb. viable infant that had cerebral damage. The second pregnancy terminated in an abortion. The third pregnancy was terminated by a Cesarean section for cephalo-pelvic disproportion after a Vague labor of 2 days. A viable infant of 9 lbs. 3 oz. was obtained. The fourth pregnancy terminated in an abortion. With the fifth pregnancy, the patient had pain under the scar for about two weeks prior to admission to the hospital. On admission, she was having contractions every 10 minutes and these were mild. A depression was felt in the uterus on palpation. A Cesarean section with a hysterectomy was done and a 5-lb. viable infant was obtained. The expected date of confinement was estimated from the size of the uterus, etc. during prenatal care as being approximately the 15th of April. The patient had had two years of amenorrhea following her fourth pregnancy, which terminated in an abortion. It was estimated the rupture occurred during the thirty-sixth week of pregnancy.

Case No. 10; 15612-K; 1954 - 29-year-old white female - 2 pregnancies

The first pregnancy terminated in a low transverse cesarean section after several hours of labor because of malposition of the head, and a viable infant was obtained. The patient was admitted to the hospital during the fortieth week of the second pregnancy. An amniotomy was done for induction of labor and the patient had 2-3 hours of labor contractions, occurring every 8-10 minutes and lasting 20-30 seconds, when she developed a mild suprapubic pain. Immediate laparotomy was done and there was found a complete separation of the old transverse scar. A viable infant was obtained and a hysterectomy was necessary.

Case No. 11; 14187-G; 1952 - 27-year-old colored female - 5 pregnancies

This patient had three previous C-sections and one abortion. During the thirty-sixth week of the 5th pregnancy she entered the hospital at 11:45 P.M. with onset of labor 3 hours and 45 minutes earlier. On admission there was suprapubic tenderness. F.H.T. were normal. An exploratory laparotomy was done, the membranes were found to be bulging through the separated old scar. A hysterectomy was done and a viable infant was obtained.

Case No. 12; 10410-G; 1955 - 31-year-old white female - 3 pregnancies

2 previous C-sections because of pulmonary tuberculosis.

A palpable scar in the uterus was noted during her prenatal care. The patient was scheduled for an elective C-section in the thirty-eighth week of pregnancy. During the 36th week of pregnancy, the patient developed severe abdominal pain and was admitted to the hospital two hours later. An exploratory laparotomy revealed rupture of the scar, and hysterectomy was necessary. A viable infant weighing 5 lbs. 4 oz. was obtained.

Case No. 13; 4162-K; 1955 - 29 year old white female - 3 pregnancies

The first pregnancy was terminated with a cesarean section after 36 hours of labor. A viable infant weighing 11 lb. 2 oz. was obtained. The second pregnancy terminated with a cesarean section with a viable infant of 8 lbs. 8 oz. During the 39th week of the third pregnancy, the patient was admitted by a private doctor for elective c-section on the next morning. Because of financial difficulties the patient was transferred to the staff service that evening. Several hours later, while the house staff was operating on a patient with an ectopic pregnancy, this patient started having mild contractions every 7-8 minutes for 20-30 seconds. The intern was checking F.H.T. when a tearing noise was heard. The patient was rushed to the operating room and on exploratory laparotomy, it was found a complete tear of the old scar, the membranes intact. A living infant was obtained, and a hysterectomy was necessary.

Case No. 14; 12806-K; 1954 - 24-year-old colored female - 3 pregnancies

The first pregnancy terminated in a cesarean section for cephalo-pelvic disproportion with a viable infant of 9 lb. 12 oz. During the thirty-fourth week of the second pregnancy, the patient was admitted after 6 hours of mild labor. Labor contractions were irregular, lasting 20-30 seconds. She developed pain in the region of the scar. A laparotomy revealed rupture of the old scar. A viable infant weighing 7 lbs. 1 oz. was obtained. The scar was trimmed and the uterus closed. The third pregnancy was terminated as a cesarean section with no labor during the fortieth week of pregnancy, with a viable infant of 7 lbs. 4 oz., and the uterine scar was in good condition.

The prognosis for the mother and infant are very poor. The maternal mortality rate probably lies between 25 and 50 per cent and the fetal mortality rate between 60 and 80 per cent in a large series of cases. In the 14 cases reported here, maternal mortality was 2 or 14.28 per cent and our fetal mortality was 6 or 42.86 per cent.

The prevention of uterine rupture is best done by intelligent obstetrical care. Inasmuch as previous cesarean scars are the predisposing cause in most uterine rupture, the elimination of all unnecessary sections would reduce the incidence of rupture. The first physician to cut the uterus has an extremely grave responsibility. The practice of doing an elective repeat ceserean section two weeks prior to the expectant date of confinement, is not the answer. It has been shown in numerous reports that the majority of ruptures occur prior to this time. In our own series, only fifty per cent occurred during the thirty-eighth, thirty-ninth, or fortieth week. It is clinically better to base the timing of a repeat section on the basis of the size of the infant from clinical evaluation and on palpation of the uterus itself, than on the E.D.C. alone. The patient must be instructed as to the signs and symptoms of impending rupture and to notify the physician or to go directly to the hospital at the earliest symptoms, if we are to reduce the mortality in those occurring during pregnancy. Careful sepsis, careful anatomical approximation of tissue in doing a section, and cereful handling of tissues may all facilitate better healing and give a scar that will not rupture.

The availability and use of blood transfusions are of life saving importance in uterine rupture. Large amounts must be available immediately and throughout any operation. Delays in starting blood for only a few minutes may make the difference between life and death. Replacement of the blood lost must be practiced in contrast to giving only one or two pints of blood as is frequently done. Hysterectomy will usually have to be done in cases of rupture, although occasionally the scar can be excised and the uterus saved.

Uterine rupture is one of the most serious accidents that obstetricians can be called on to handle. It frequently means a double tragedy, with loss of the mother and the fetus. Intelligent, alert obstetricians will prevent many of these catastrophes.

SMA BREAKS GROUND FOR NEW HOME

On Sunday afternoon, August 4, ground was broken for the new Southern Association headquarters home. President J. P. Culpepper presided. Dr. John Buchanan, Birmingham, gave the invocation. Dr. W. Kelly West, president-elect, Oklahoma City, Oklahoma, and Dr. Milford O. Rouse, first vice-president in line of succession, Dallas, Texas, along with ten members of the Council were present at these exercises, and all took part in the actual ground-breaking.

The Woman's Auxiliary was represented by Mrs. John M. Chenault, Decatur, Alabama, who is the member of the Auxiliary Council from Alabama. Mrs. Walker L. Curtis, president-elect, Atlanta, Georgia, was also present and brought greetings.

Occupancy of the building is expected by not later than March 15, 1958. The Association had in its reserve sufficient funds for the purchase of the lot, $50,000.00. There will be needed somewhere between $150,000.00 and $175,000.00 to complete the building. Friends of the Association have already contributed sufficiently to get the building under way. Much more will be needed. It is hoped by the time the building is complete friends of the Association will have contributed sufficiently to complete the payment of it. Contributions are deductible for federal income tax purposes and should be sent to C. P. Loranz, secretary, Home Building Finance Committee, 1020 Empire Building, Birmingham, Ala.

INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW

JOSEPH P. MELVIN, Jr., M.D. . . . . Cardiology
HARVEY F. GARRISON, Sr., M.D. . . . . Pediatrics
JAMES D. HARDY, M.D., and STAFF, Department of Surgery,
University Medical Center ....Surgery

CARDIOLOGY

Diamox as an Oral Diuretic in Ambulatory Cardiac Patients—Warren S. Braveman, Richard L. Dexter and Albert L. Rubin (Cornell University Medical College, New York City).

This is an evaluation of orally administered Diamox in an attempt to determine its effectiveness. Drawbacks to oral mercury compounds, such as gingivitis and gastro-intestinal reactions, interfere with their use frequently, and their requirement of several pills in divided doses each day also poses another obvious disadvantage to the oral mercurials. An oral agent, effective in a single dose without the above side effects, would be a great improvement in the treatment of ambulatory cardiac patients. The authors believe that Diamox fulfills these criteria, and is also safe and free of disturbing side effects in the dosage used.

Diamox was administered, one 250 mg. tablet every other day, and maintained 21 ambulatory cardiac patients at optimum body weight as effectively as had parenteral mercurial agents. Average duration of therapy was 12.7 months and 9 of the group were treated for 18 months. None of the minor side effects which have been reported with Diamox—paresthesias, anorexia, or drowsiness—were reported by the patients. Serial studies of plasma electrolyte concentration reveals no significant alterations in electrolyte patterns. The morale of all patients improved considerably with the use of Diamox instead of parenteral diuretic therapy. They were generally more comfortable and appreciated the reduction in number of visits to the out-patient department, made possible by the elimination of the need for intramuscular mercurial injections.

The pharmacology of Diamox is reviewed, and its action by inhibition of carbonic anhydrase activity in renal tubular cells, resulting in a decreased reabsorption of bicarbonate iron, is noted. They also mentioned that in order for second and subsequent challenges with Diamox to produce a renal response, sufficient time for recovery from the initial bicarbonate loss, that is restoration of acid base balance, must be allowed. Subsequent doses of Diamox will elicit less or no diuretic response, if administered without regard for this principle. This is the reason that the Diamox tablets were given 48 hours apart in this study. It also follows that patients with low body bicarbonate stores, reflected by low plasma carbon dioxide combining powers, secondary to renal disease or ammonium chloride administration, will respond poorly, if at all, to Diamox administration. By contrast, in patients with cor pulmonale we have higher than normal bicarbonate levels and they often respond to Diamox extremely well.

COMMENT

All of us are looking for the ideal oral diuretic agent. In my experience, Diamox has been a weak but predictable diuretic, even when given by the above method. I am not at all convinced that oral mercurial diuretics, namely Neohydrin, are not more efficient than Diamox. The exception of cor pulmonale in congestive heart failure is noted, and admittedly Diamox seems to work better in these patients than mercurials.

J. P. M.

Prevention of Aspiration During Anesthesia—S. Gilman and A. L. Abrams, Boston, Massachusetts. *New England J. Med.*, 225; 508, September, 1956.

Every patient who is required to undergo anesthesia while having a full stomach or a distended abdomen must face the serious danger of aspiration of gastric contents. In determining whether or not a patient has a full stomach, several special points must be considered: 1) the normal emptying time of the stomach may be markedly prolonged by trauma, the onset of labor, or psychic disturbance; 2) In patients with intestinal obstruction or serious gastrointestinal bleeding, the presence of a Miller-Abbott or Levin tube with continuous suction does not assure that the stomach is empty; 3) patients with severe, acute conditions of any type frequently show gastric distention.

A number of anesthetic techniques are in general use to mitigate against the dangers of aspiration: 1) the patient may be anesthetized by local, regional block or spinal anesthesia. When skillfully performed this usually works well and is frequently the technique of choice. In a number of cases these regional techniques are not practical; 2) drugs such as apomorphine may be used to produce vomiting prior to the induction of anesthesia and are usually effective. However, this technique is very traumatic to the patient and these drugs have inherent toxicity and may cause marked depression. 3) an endotracheal tube may be introduced under topical anesthesia in the conscious patient. This is an excellent technique but it requires considerable skill and a cooperative patient. It is possible for aspiration to occur while intubation is being attempted under topical anesthesia; 4) the patient may be induced with pentothal or cyclopropane and a muscle relaxant and intubated as rapidly as possible. It is possible for aspiration to occur after the patient is asleep but before the endotracheal tube is in place even though only a few seconds elapse.

The authors have described the technique which is a modification of that previously described by Causch and Macintosh. This consists of a double lumen tube, size 16 French, with an inflatable balloon placed 5 cm. from the end. The tube is introduced into the esophagus and stomach either through the nose or the mouth. The balloon is then inflated with 50 cc. of air and the tube is withdrawn until resistance is felt. At this point, the tube is taped securely to the forehead. The pressure of the inflated balloon on the cardio-esophageal junction is designed to prevent regurgitation of gastric contents into the esophagus. After the balloon is in place, the patient may be anesthetized and a cuffed endotracheal tube inserted as additional protection. This double lumen tube has been used successfully in 5 operations associated with intestinal obstruction and severe abdominal distention. In no case did regurgitation of gastric contents into the esophagus occur.

Comment: The technique described by the authors would appear to have promise and deserves more extensive trial. This paper is also of importance in that it reminds physicians of the serious danger of aspiration in unprepared patients receiving anesthesia. It points up the fact that while the various techniques described mitigate against the danger of aspiration in the unprepared patient, there is no technique available which insures against it. Highly skillful anesthesia can greatly reduce this danger, but it cannot totally remove it. This emphasizes the basic principle: no surgery should be performed on the unprepared patient unless postponement of this surgery will cause harm to the patient.

J. K. Seale, M.D.
Acting Director, Division of
Anesthesiology

PEDIATRICS

Typhoid Fever in Children. J. K. Thanawalla. Indian J. Pediat. 23:421-424 (Dec.) 1956 (In English) (Calcutta).

One hundred eighty-nine children, 107 boys and 82 girls, with typhoid fever were treated at a hospital in Bombay in 1955. Of these, 52 were between 2 and 5 years of age, 126 between 6 and 10, and 11 between 11 and 12. Of 13 deaths (a case fatality rate of 6.9%), 4 occurred in children between 2 and 5 years of age, 8 in children between 6 and 10, and 1 in the age group from 11 to 12 years of age. Nine of the children who died were boys and 4 were girls, the case fatality rate being higher among boys. In Bombay, the incidence of typhoid fever is higher in the months of May and October. Relative bradycardia, observed in adults with this disease, was generally absent in the children. The typical "typhoid tongue" was observed only in patients with severely toxic reactions and in older children. The incidence of complications, such as toxemia, circulatory failure, rectal hemorrhage, meteorism, diarrhea, bronchopneumonia, and meningism, was higher in children than in adults. The case fatality rate, however, was lower in children than in adults, except for children with diarrhea and circulatory failure. Relapses occurred in 10 children (5.2%), none of whom died. Treatment consisted of the administration of chloramphenicol. Of the 189 patients, 147 with high temperatures or other complications were treated with this drug. Of the 147, 48 were given the drug in liquid form and 99 in tablets. When tablets were given, it took an average of 4.7 days for the temperature to return to normal, and, when liquid chloramphenicol was given, the temperature became normal within an average of 7.4 days.

COMMENT

By Harvey F Garrison, M.D.

This is a most interesting and informative article on the history as well as the treatment of a great number of cases of typhoid fever. It has been our experience to have treated a number of cases of typhoid before the present new treatment chloramphenicol was known. In all the cases we have treated with this medicine we have had favorable hours after treatment with this drug. This drug is an ideal treatment and should be given as soon as diagnosis is made.

PRACTICAL CONCEPTS ON THE RATE OF INFUSION OF GLUCOSE SOLUTION

HAYNES HESLEP, A.B.†
Jackson, Mississippi

INTRODUCTION

In both medical and surgical practice glucose solutions are administered quite frequently. The purpose of such solutions is to give water and calories in the form of carbohydrate. It is advantageous to give such solutions as rapidly as practical in order to eliminate discomfort and immobilization of the patient. However, they should not be given at such a rapid rate as to produce diuresis or an unnecessary loss of glucose.

REVIEW OF LITERATURE

Woodyatt, Sansum, and Wilder in 1915 reported the figure of 0.85 grams per kilogram per hour as being the rate of utilization of glucose in intravenous injections in normal healthy humans. The infusions were started at a slower rate and were gradually speeded up until this figure was reached. They state that 0.85 grams per kilogram per hour will not cause glycosuria or diuresis[1]. This figure remained without experimental verification for 32 years (1947). Lockhart and Elman believe that the upper limit is 0.5 grams per kilogram per hour. They suggest that Woodyatt *et al.* obtained their figure by starting at a slower rate or because of the frequent latency of the appearance of the glycosuria failed to detect it[2]. The ability of the body to utilize increasing amounts of glucose is referred to as Allen's paradox or the "dextrose paradox." The "dextrose paradox" is "that remarkable power of every nondiabetic organism to utilize dextrose in absolutely unlimited quantity." Allen further states that: "Give the sugar by any route; increase the quantity at pleasure; it is possible by sufficient dosage to kill the animal but it is not possible to cause more than a fraction of the whole to be excreted in the urine[3]."

Pareira and Somogyi state that 200 grams of glucose is needed over a 24 hour period to supply the liver with enough glycogen to prevent ketosis. This amount, however, is not enough to effect protein sparing. They state that no diuresis occurred if the rate of infusion did not exceed 50-60 grams per hour. This figure would seem to be a little high but they go on to say or rather recommend that the infusion be started slow and gradually increased to 50 grams per hour[4].

Fantus in 1936 studied the post-operative utilization of intravenous glucose. The patients received over 200 grams of glucose a day and glycosuria was observed in over half of the patients but he fails to give the rate of administration[5].

Butler and Talbot state that it has been suggested that the human body is able to oxidize only 10-12 grams of glucose per hour. If this is so, then a 60 kilogram man should receive only 288 grams in 24 hours. Infusion rates above these limits appear to be accompanied by an increased storage of glycogen and possibly fat. Therefore, it is beneficial to give above the oxidative requirements if infusions result in only moderate hyperglycemia and glycosuria without cardiac embarrassment or pulmonary congestion[6].

Pareira and Probstein reported 3 cases of ketosis glycosuria following intravenous glucose in apparently normal individuals. These patients immediately before discharge were given glucose tolerance tests in order to rule out latent diabetes. The tests were completely normal and so these were termed cases of "transient diabetes". Although "transient diabetes" is relatively infrequent, it is a condition which must be kept in mind if one is going to use intravenous therapy. "Transient diabetes" and ketosis must be treated with insulin just as diabetes mellitus and ketosis must. This state may follow accidental as well as surgical trauma[7].

Lockhart and Elman gave 104 timed and controlled injections of 1 liter of various glucose solutions to 32 selected patients. Patients were in for plastic or elective surgery and were pre-op or at least 8-10 days post-op. All had normal urinalyses, normal blood glucose and NPN levels, and were in a normal state of nutrition and on a regular diet. Patients were weighed the night before and the rate was figured on this. The rates ranged from 0.35 to 3.1 grams per kilogram per hour. The degree of glycosuria and diuresis was measured in each case for 4 hours. The four hours included the time of infusion. At first specimens were taken for 24 hours but in the first 30 cases no glycosuria was observed past the four hour period so this was utilized for the remainder of

---

*From the Department of Surgery, University of Mississippi Medical Center, Jackson, Mississippi.
†Student Research Fellow.

the experiment. The following solutions were used: 5% D/W; 5% D/S; 10% D/W; 10% D/S; normal saline; 5% amigen in 5% dextrose; 5% amigen in 10% dextrose; 5% amino acid in 5% dextrose; 15% D/W; 15% dextrose in 5% amigen; 15% dextrose in 5% amino acid. Only one case presented glycosuria at a rate at or below 0.5 grams per kilogram per hour, and all but 6 cases showed glycosuria at a rate above this figure. The degree of glycosuria varies among the patients and in the same patient with different solutions despite the same rate. Amigen or pure amino acid added to the glucose appeared to increase the rate of utilization of glucose by the tissues. This was shown by lowered blood levels and less glycosuria when the amigen or amino acid were added to the glucose. The greatest output of urine followed 5 and 10% D/W. The degree of diuresis tended to increase with the degree of glycosuria and with the rate of administration, but there seemed to be a closer relationship to the type of solution injected. Five and 10% D/S greatly decreased the output and an actual hydration was noted. As a result of their study, they concluded that 1000 cc of 5% dextrose could be given in 1 hour and 25 minutes and an equal amount of 10% dextrose in 2 hours and 50 minutes (for a 70 kilogram man) without glycosuria and associated diuresis[2].

Weinstein reports an average loss of 6% of 50 grams of dextrose if infused at the rate of 0.75 grams per kilogram per hour. He says that to avoid glycosuria the dextrose must be given at the rate of 30-40 grams per hour[8,9].

Cain and Belk report a coefficient of correlation for grams of glucose given and grams retained of .9898. There is no correlation between the rate at which glucose is injected and the amount lost in the urine. The "spill" is not related to the rate or the total amount given within the limits of their study, but is conditioned by factors within the individual patient[10].

Winslow found that if 5% dextrose was given at rates of 300-500 cc per hour (420 cc/hr. = 7 cc/min. = 84 drops/min.) and an average of 3000 cc per day that 79% of his patients showed glycosuria. There was a maximum glycosuria on the day of operation, a decrease on the second, and then a rise on the third and fourth days, followed by another decrease. The amount spilled was generally insignificant and averaged only 1.5% loss or a loss of 2.25 grams out of 150 grams. These infusions were given at an average rate of 0.2-0.5 grams per kilogram per hour. This is far below the 0.85 reported by Woodyatt et al for healthy individuals but tends to agree with the figures reported by Wilder and Sansum in 1917 in their report on glucose tolerance in health and disease[11]. Winslow found that if 10% dextrose was given at rates of 300-500 cc per hour that practically all of his patients demonstrated glycosuria on the average of 5.15%. This is equivalent to the rate of 0.40-0.60 grams per kilogram per hour. In this comparison of 5 and 10% glucose the "dextrose paradox" is again illustrated[12].

One hears many figures for the number of drops in a cc., but the delivering apparatus is never mentioned. If the drip chamber in the Baxter infusion sets, No. R410A, commonly employed in UMC is used as a reference, then 12 drops equal 1 cc.

SUMMARY

The rate of utilization of glucose depends on many things such as kind of disease, state of nutrition, days post-operatively, type of solution and rate of administration. Woodyatt believed the glucose tolerance of the normal healthy individual to be 0.85 grams per kilogram per hour. Lockhart and Elman by selecting their patients and considering them as having returned to a normal state of metabolism believed the glucose tolerance to be 0.5 grams per kilogram per hour. This meant that a 70 kilogram man could receive 1000 cc. of 5% D/W in three hours without diuresis or glycosuria.

The immediate post-operative patient, however, is in a different category. If 5% or 10% dextrose is given at 420 cc. per hour (84 drops per minute), the glycosuria and diuresis is insignificant. The diuresis occurs with dextrose in water and an actual hydration may take place with dextrose in saline.

It is believed, therefore, that for the first five days post-operatively 5% and 10% dextrose solutions can be given at the rate of 420 cc. per hour and that the diuresis and "spillage" is negligible. After this time one can give 1000 cc. of 5% dextrose in 1½ hours and 1000 cc. of 10% dextrose in three hours without any diuresis or glycosuria.

NOTE: I would like to express my gratitude and appreciation to Doctor Curtis P. Artz for his assistance, instruction, and review of the manuscript.

BIBLIOGRAPHY

1. Woodyatt, R. T., Sansum, W. D., and Wilder, R. M.: Prolonged and Accurately Timed IV Injections of Sugar. J.A.M.A. 65: 2067, 1915.
2. Lockhart, C. E. and Elman, R.: Effect of IV Glucose and Amino Acids in Glycosuria and Urinary Output in Humans. Surg. Gynec. and Obst. 88: 97, 1949.
3. Allen, Frederick M.: Studies Concerning Gly-

cosuria and Diabetes. Cambridge, Mass., 1913 Howard Univ. Press. Chapter 1.

4. Parcira, M. D. and Somogyi, M.: Rationale of Parenteral Glucose Feeding in Post-op State. Ann. Surg. 127: 417, 1948.
5. Fantus, B.: Fluids Post-op, Statistical Study. J.A.M.A. 1936, 107, 14.
6. Butler, A. M. and Talbot, N.: Parenteral Fluid Therapy. New Eng. J. Med. 231: 585, 621, 1944.
7. Pareira, M. D. and Probstein, J. G.: Transient Diabetes in Post-op State. Ann. Surg. 133: 299, 1951.
8. Weinstein, J. J.: The Utilization of DX., Leva, and Invert Sugar by Norm. and Surg. Pts. Am. J. of Proct. 4: 21-30, 1953.
9. Weinstein, J. J.: Comparative Utilization of Invert Sugar and Dextrose in Non-Diabetic Human Beings. Med. Ann. D. of C. 20: 355, 1951.
10. Cain, J. C. and Belk, W. P.: Assimilation Rate of IV Injected Glucose in Hospital Pts. Am. J. Med. Sci. 203; 359, 1942.
11. Wilder, R. M. and Sansum, W. D.: D-Glucose Tolerance in Health and Disease. Arch Int. Med., Chicago, 1917, xix, 311-334.
12. Winslow, S.: Dextrose Utilization in Surgical Pts. Surgery, 4: 867-880, 1935.

MISSISSIPPI ACADEMY OF GENERAL PRACTICE

ANNUAL ASSEMBLY—SEPTEMBER 18 AND 19, 1957
HOTEL HEIDELBERG, JACKSON, MISS.

WEDNESDAY, SEPT. 18

L. V. Dill, M.D., of Washington, D. C.—"Therapy of Spontaneous Abortions"; "Treatment of Vaginitis".

James W. Headstream, M.D., Associate Professor of Surgery, University of Arkansas—"Bladderneck Obstructions in Children".

Major Frederick Sullens, editor *Jackson Daily News* will speak at the luncheon.

Mr. Jimmy Arrington, humorist-editor-columnist of Collins, Mississippi, will be the banquet speaker.

THURSDAY, SEPT. 19

Ray O. Noojin, M.D., Professor of Dermatology, Medical College of Alabama—"Common Skin Lesions"; "Cancerous and Precancerous Lesions".

Floy Jack Moore, M.D., of the University of Mississippi Medical Center—"The Tranquilizers".

John G. Young, M.D., of Dallas, Texas—"Preventing Behavior Problems"; "Adolescence".

James W. Headstream, M.D., of University of Arkansas—"Office Urology".

John S. DeTar, M.D., immediate past president of AAGP of Milan, Michigan—luncheon speaker—"The Academy and Its Members—What Does the Future Hold?"

JOURNAL GP FOR STUDENTS

The board of directors of MAGP voted unanimously to pay half the subscription price of the *Journal GP* for all senior medical students at the University of Mississippi who wish to subscribe. Last year the Academy did this and 16 of the 24 students took advantage of this opportunity.

NEW MEMBERS

Dr. Joe Bethany, University Hospital, Jackson, Miss., associate
Dr. Ralph Dunn, Morton, Miss., associate
Dr. M. S. Riddell, Winona, active
Dr. E. E. Ellis, Laurel, active
Dr. Tom H. Mitchell, Vicksburg, active
Dr. Charles N. Wright, Jackson, active
Dr. A. D. Powell, Coldwater, active

NEWS BITS . . .

Dr. John C. Longest, president-elect, and Dr. A. T. Tatum, secretary-treasurer, plan to attend the AAGP State Officers Conference in Kansas City on September 22.

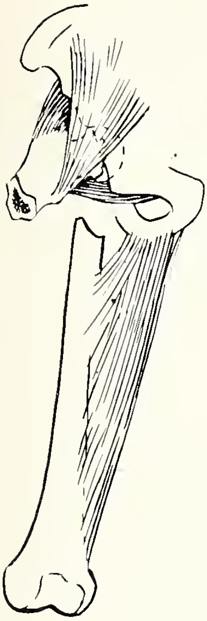
The Academy is co-sponsoring the scientific sessions of the Mississippi Division, American Cancer Society, to be held at the Heidelberg Hotel in Jackson on the afternoon of September 26.

The Louisiana Academy of General Practice will hold its Annual Assembly on October 8, 9, and 10 in Monroe. Mississippi Academy members have received a cordial invitation to be guests of their Louisiana colleagues.

This year Mississippi Academy meeting should be the biggest and best ever. In addition to a superb scientific program top-notch luncheon and banquet speakers will appear. Dr. Jack DeTar, past-president of AAGP, is one of the most forceful and dynamic speakers in American medicine. A record-breaking 40 technical and 5 scientific exhibits will be on hand . . . DON'T MISS IT!

FRACTURE PROBLEMS

LESLIE V. RUSH, M.D.
Meridian, Miss.
No. 5 OF A SERIES



SUBTROCHANTERIC REGION DISPLACEMENT (Violent)

Upper fragment:

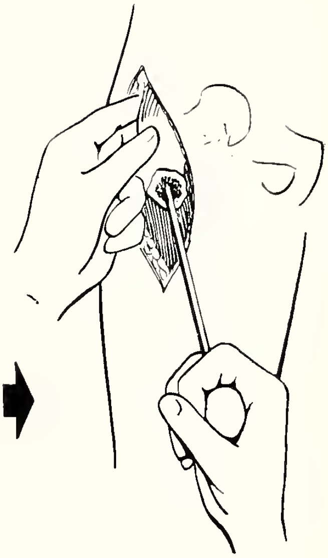
1. Flexes (ilio-psoas)
2. Abducts (gluteus minimus)
3. Externally rotates (short rotators)

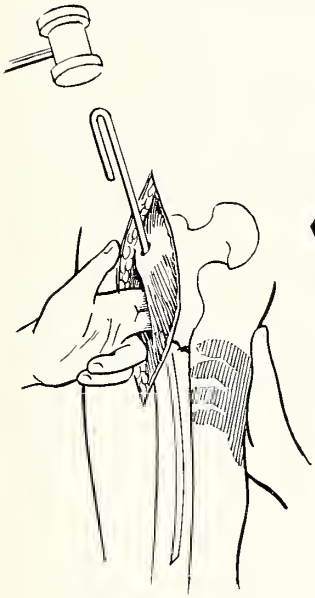
Lower fragment:

1. Adducts (adductor pull)

TECHNIC

Retograde opening for pin made in proximal fragment by awl-reamer ¼ inch diameter.



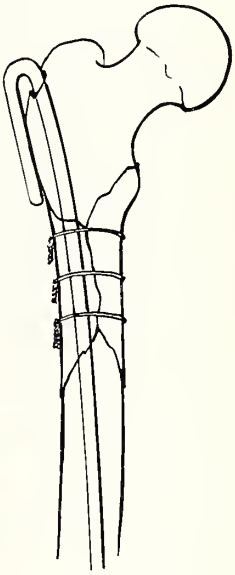


REDUCTION

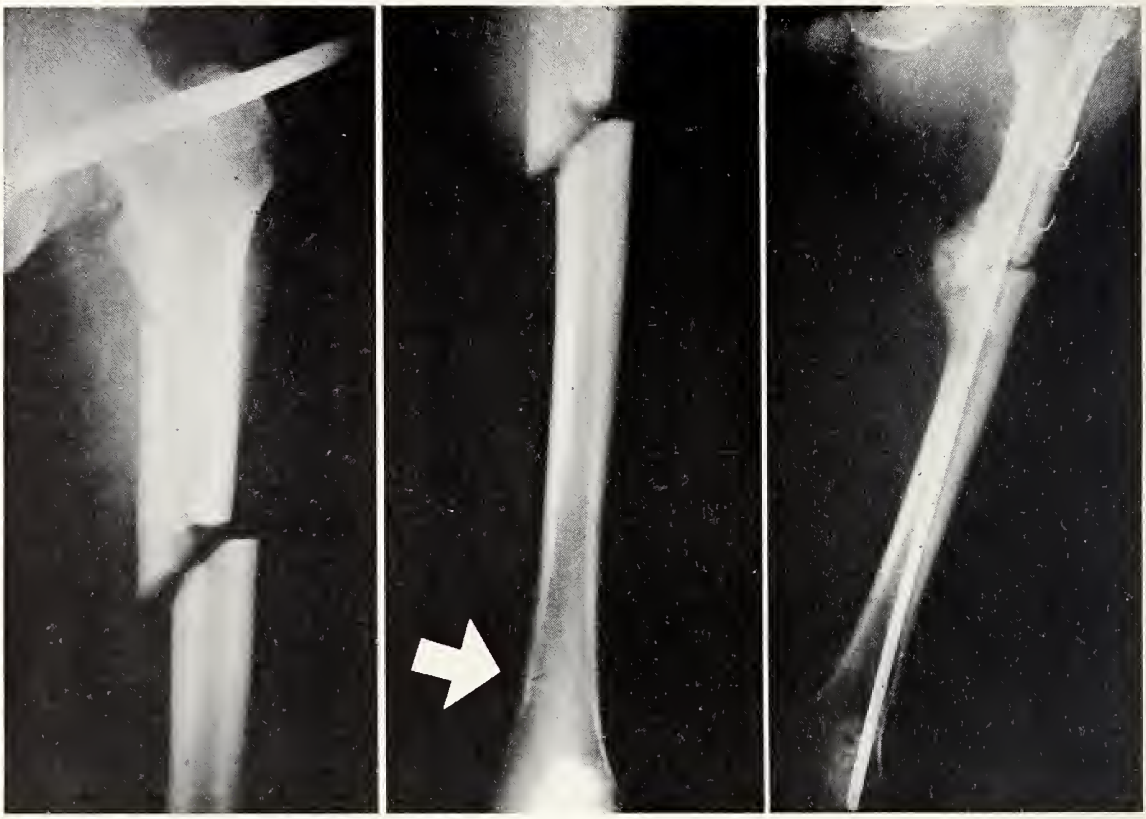
Fracture reduced by manipulation and transfixed by special curved femur pin ¼ inch diameter which resists both angulation and rotation.

WIRING

For single or double butterfly fragments add supplemental circular wires of type 316 stainless steel.



Note: This technic is quite efficient in the young adult and the middle aged. It should be used cautiously in the brittle bones of the aged in whom the nail and anchor plate gives better fixation.



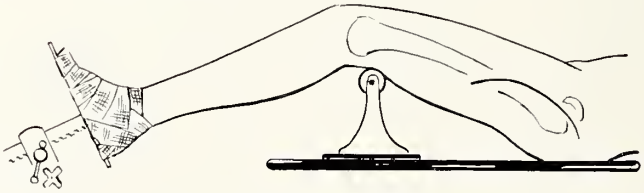
MULTIPLE FRACTURES FEMUR SHAFT
(Case Review)

Segmental fracture femur with single butterfly fragment. Male, age 45. Note transverse supracondylar fracture.

Treated by semi-open operation on proximal fractures and transfixion of entire shaft by special type Rush Pin curved to conform to contour of medullary canal.

Lateral plaster splints worn 3 weeks. Patient returned to work as railroad engineer, 9 months after injury with no deformity and no loss of function.

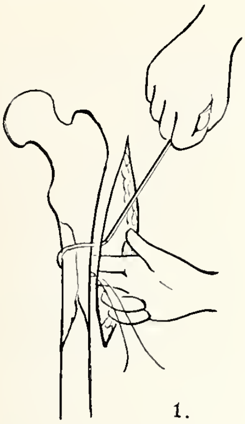
Certain problems were encountered which are here depicted.



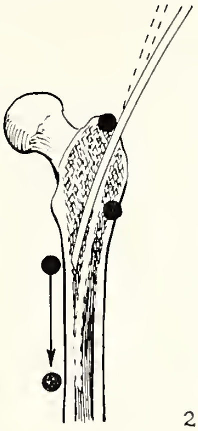
POSITION OF PATIENT

Thigh adducted. Countersupport beneath condyles. Slight flexion of hip and knee simplified reconstruction by relaxing muscle pull.

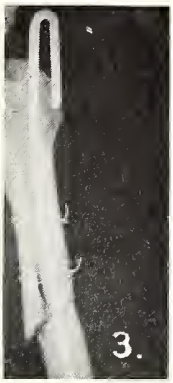
Curved lateral incision extended through fascia lata, vastus lateralis reflected anteriorly.

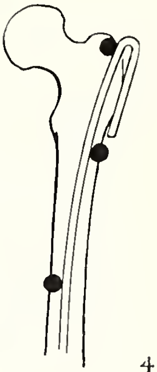


1.



2.





4.

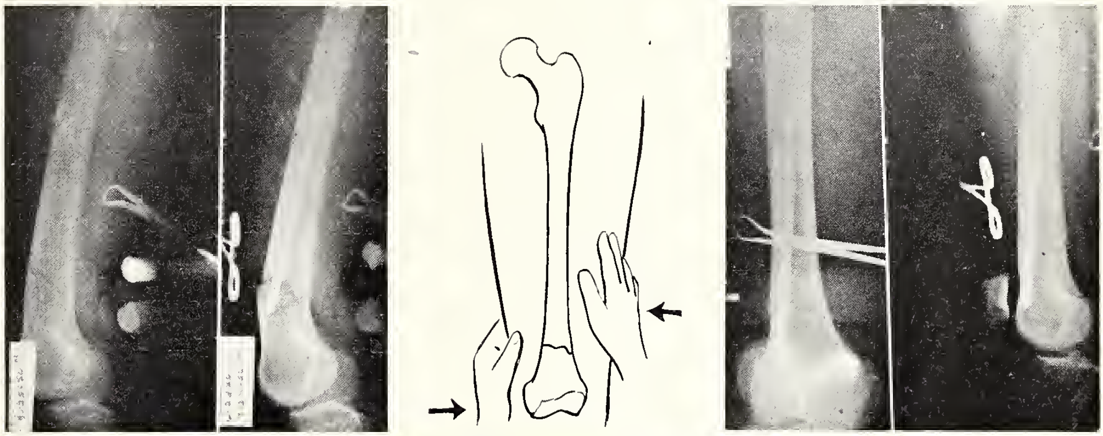
HANDLING PROXIMAL FRAGMENT

1. Butterfly fragment fixed by circumferential wires. These were applied avisually by wire-carrier, using fingers as a guide. Soft tissue not freed from bone.

2. Special curved pin introduced through trochanter. Note sled runner point gliding down far cortex gradually building up 3 points of pressure in this fragment.

3. The butterfly fragment has separated from pressure of the pin. This was later corrected by tightening wires. As pin traveled, this area of pressure was further distributed down medial surface of shaft fragment.

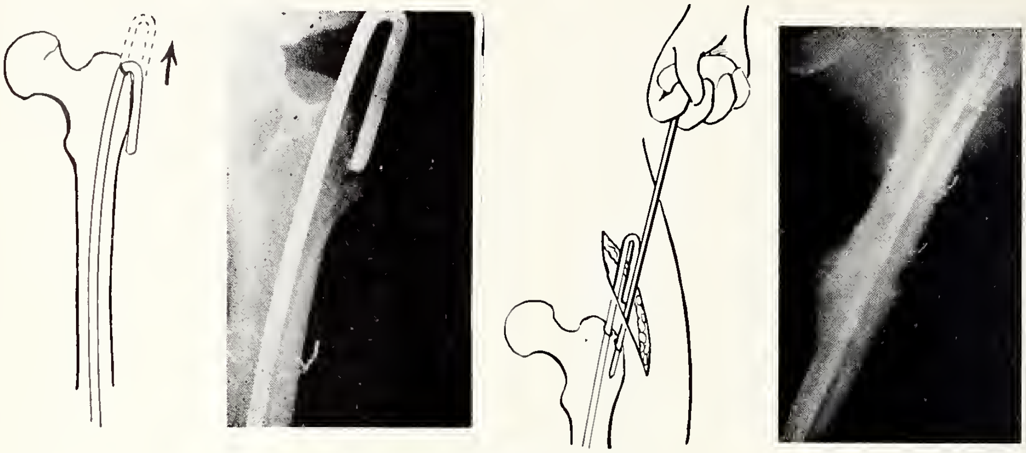
4. Three points of pressure in proximal fragment controlled angulation and torque. The hooked head external to cortex gave further stability.



CONDYLAR FRAGMENT

The attempt to drive the point obliquely into lateral condyle produced angulation. The pin was partially withdrawn. Manual pressure exerted to correct angulation as pin was redriven.

Fixation of this fragment was stable.



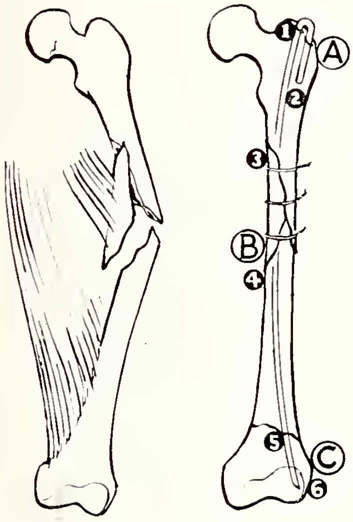
MIGRATION OF PIN

Check-up x-rays a few days after surgery showed pin had migrated upward. The cause was not at first understood, but it was eventually determined that the prong of the head had not penetrated the trochanter but had been sprung open so that it exerted this hurtful dynamic force.

The pin was adjusted as shown and migration did not recur.

STABILITY OF FIXATION

(Recapitulation)



The curved pin in the femur resists angulation and torque by dynamic forces. The fractured femur tends to angulate laterally. The curved pin resists this force by exerting pressure in 3 areas, (A, B, & C.)

PROXIMAL FRAGMENT: The pin does not rotate or angulate in this fragment because passing obliquely into the medullary canal it creates 3 points of pressure against the bone (1, 2 & 3). In addition, the elongated hook of the head buried in the trochanter prevents rotation.

DISTAL FRAGMENT: Tendency to angulation (anterolateral) from adductor pull is resisted by pin at two points (5 & 6).

President's Page

Professional liability insurance usually becomes a subject of interest to physicians on or about the anniversary date of their respective policies. It's then they are reminded of the premium costs which continue an upward spiral at accelerated rates. This may hardly be a pleasant subject but it's important to every man and woman practicing medicine in Mississippi.

To characterize every patient as a potential plaintiff is a gross injustice. Of this, however, you may be sure:

> . . . suits against doctors have mounted in geometric progression during the last decade.
>
> . . . generally, the public is "litigation conscious"—and not just against the medical man.
>
> . . . juries are handing down award verdicts of unbelievable amounts.

The thoughtful physician asks himself where this will end and what can be done about it. Nobody likes to be hit in the pocketbook, especially that vast majority of doctors whose principal relationship with professional liability insurance has been a bigger annual bill.

The trend of developments in professional liability litigation and suits is a story in itself, one requiring long and detailed analysis. Obviously, there is only one remedy and that's long term prevention programs achieved through painstaking education of the public and profession. The Mississippi State Medical Association does not agree with all actions by the National Bureau of Casualty Underwriters or the major carriers in determining premium increases. This, then, is no defense of the premium parlay but there are points to be examined on both sides of the fence.

Among doctors, there is probably no such thing as a "blue chip risk." Over the years, some physicians have advanced the idea of organizing their own professional liability insurance companies. A few have suggested that this is a proper function of the state medical association. Whenever this suggestion has been made in its many variations, one aspect has remained constant: The proposers would screen all applicants according to a prescribed set of extremely high standards and " . . . take only the top risks." Any person engaged in the practice of medicine is as likely to be sued as the next—all things considered—and there's no predicting what the outcome will be. One jury award could easily wipe such a company out of business as quickly as you can say, "Your Honor, we find for the plaintiff!"

Secondly, it must be remembered that the cost of any insurance is what the risks make it. Banking, utilities, and insurance are about the most carefully licensed and regulated businesses in the nation today. Exceptions to this rule—few and far between—are, indeed, so unusual as to make news and invite attention to the variation. MSMA may not agree with the formula for fixing premium costs but there are carefully prescribed and uniform procedures for doing this. Just one substantial jury award can result in upping professional liability insurance costs to every physician in the state.

Third, the whole of professional liability insurance amounts only to a fraction of that proverbial drop in the insurance business bucket. There are about 220,000 doctors of medicine in the United States and not every one has professional liability coverage. Thus, from an insurance business standpoint, it would be far more profitable to have all the automobile insurance in the city of Los Angeles alone than all the physicians' professional liability business in America! No insurance company is thus ". . . making millions" off the doctors. Small wonder that the insurance industry refers to professional liability as an "accomodation line."

Finally, there are no bargains in professional liability insurance. Look and you can usually find the gimmick in coverage priced below standard rates. During the past few months, MSMA's Council has studied—in great detail through many hours of meetings and hearings—two such plans. One was proposed by a domestic company and another, by an English organization. Neither could measure up to bare minimum standards of adequacy and were declined. Physicians are well advised to be guided by these minimums when purchasing professional liability coverage:

> . . . buy from a substantial carrier operating nationally in most casualty lines who's licensed to do business in Mississippi.
>
> . . . deal with a reputable, established hometown agent who represents you, the client, and who's available at any time to service the policy he sells.

(continued on page 97)

Medical School Miscellany

MEDICAL SCHOOL MISCELLANY

The University Medical Center continuing education program has added another dimension.

In a departure from the conventional refresher course, "personalized" Postgraduate Student Visits are now being offered to physicians throughout the state.

Announced in the August Medical Center Report, the Visits will be available in five clinical and two basic science departments when school begins in September.

Here's how the program will work.

Postgraduate Student Visitors will be accepted singly or in groups of no more than two or three. They'll spend a week, preferably two weeks, in the desired department where they'll be treated like members of the family. The Visitors will attend lectures, demonstrations, conferences and ward rounds in an intensive period of supervised experience covering all teaching activities.

The Visits will follow no set pattern or formal outline but will be individually developed to meet the needs of each participant.

Even enrollment arrangements will be handled person-to-person. Interested physicians are asked to get in touch with the head of the department they'd like to visit so that a mutually feasible time and program can be worked out.

Although all Medical Center departments would like to share in the program, some few do not yet have sufficient personnel to do so, the Report states. Participating clinical departments are: Medicine, Dr. J. Robert Snavely, chairman; Psychiatry, Dr. F. J. Moore, chairman; Surgery, Dr. James D. Hardy, chairman; Pathology, Dr. William V. Hare, chairman, and Obstetrics-Gynecology, Dr. Michael Newton, chairman.

Visitors will also be accepted by two basic science departments. They are: Physiology-Biophysics, Dr. Arthur C. Guyton, chairman, and Parasitology, Dr. Thomas J. Brooks, Jr., chairman.

No fee will be charged. The medical school postgraduate Education Committee which plans and supervises countinuing education, explains that the school will not incur extra costs since the Visits will fit in with normal operation. Consequently, no tuition is necessary.

From the time its first students entered its doors two years ago this fall, the school of medicine has been keenly aware of its obligation to provide refresher courses for the practicing physician, the Postgraduate Education Committee affirms.

All physicians have been invited to come to weekly grand rounds and conferences. Many do so. Lively interest and excellent attendance have marked the one to five-day formal seminars held at the Center.

The Postgraduate Student Visit program will enlarge and strengthen the service the medical school now renders physicians who want to learn new skills and polish up former ones without absenting themselves from their practices too long.

Category I credit toward the American Academy of General Practice postgraduate education requirements will be awarded on an individual basis.

NEW RADIOLOGIST

A Mississippi man, Dr. Bernard T. Hickman, has returned to his home state as an assistant professor of radiology on the University Medical Center staff.

Dr. Hickman was a fellow in radiology at Ochsner Foundation Hospital and Ochsner Clinic before coming to Jackson in August. He was also a radiology consultant to the Louisiana State Penitentiary and Lallie Kemp Charity Hospital.

He worked at the Oakridge Institute of Nuclear Studies in 1956 and will assist with the Isotope Laboratory at the Medical Center.

Dr. Hickman attended Millsaps and Mississippi Colleges and got his M.D. degree at Tulane. After interning at Charity Hospital in New Orleans, he was in general practice in Alpharetta, Ga., before taking his specialty training.

Dr. Hickman is the son of Dr. W. Bernard Hickman of Louisville, Miss.

BIGGEST CLASS

The Medical School freshman class will reach full complement this September. Dr. David S. Pankratz, dean, has announced that 80 students have been accepted for the first year, largest class ever admitted to the University of Mississippi School of Medicine.

Classes will resume on September 5 and end June 5 with commencement calendared on June 8, 1958.

SURGERY PRESENTATIONS

The American College of Surgeons has accepted 23 abstracts submitted by the University of Mississippi Department of Surgery for presentation on its fall forum in Atlantic City.

In addition to the papers, members of the Medical School staff will present five films and two exhibits, participate in five panels and preside over two series of papers.

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $3.00.

Published monthly at 104 Hospitality Street, Booneville, Mississippi. Return postage guaranteed.

W. H. ANDERSON, M.D. .... Editor-in-Chief
MILDRED P. ANDERSON .... Assistant Editor

MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY

C. W. Patterson, M.D. .... President
Rosedale, Miss.
J. Max Roy, M.D. .... President-elect
Forrest City, Ark.
C. L. Chumley, M.D. .... Vice-President
Nashville, Tenn.
Lon E. Reed, M.D. .... Vice-President
Hot Springs, Ark.
R. B. Cunningham, M.D. .... Vice-President
Booneville, Miss.
Thurman Crawford, M.D. .... Secretary-Treasurer
Memphis, Tenn.

Mid-South Associate Editors

H. King Wade, M.D. .... Hot Springs, Ark.
R. L. Sanders, M.D. .... Memphis, Tenn.
Frank M. Acree, M.D. .... Greenville, Miss.

MISSISSIPPI STATE MEDICAL ASSOCIATION

Howard A. Nelson, M.D. .... Greenwood
President
Guy T. Vise, M.D. .... Meridian
President-elect
Geo. W. Twente, M.D. .... Jackson
Secretary
Rowland B. Kennedy .... Jackson
Executive Secretary

State Associate Editors

Louis F. Rittelmeyer, M.D. .... Meridian, Miss.
John T. Bryan, M.D. .... Meridian, Miss.

The Publication Committee is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.

Address all material for publication to W. H. Anderson, M.D., 104 Hospitality Street, Booneville, Mississippi.

§

THE COST OF MEDICAL CARE

A Jackson drug store ran this ad in the newspapers several months ago: "Two decades ago, 7,000 children died every year of whooping cough. Last year, only 310 children died of whooping cough. What explains the difference? It's the new wonder drugs—unknown two decades ago. Priceless drugs? Sure! Yet the price of the average prescription hasn't gone up any more in 20 years than has the price of a pound of coffee."

This approach to the ever-present problem of medical expense is realistic: first, because it doesn't deny that medicine is expensive—which it is—and second, because it shows that the benefits received by the buyer are worth paying for.

Most doctors realize the futility of arguing the point of medical costs with patients; it simply doesn't do any good. We might remember that going one step further, agreeing that medical care is indeed expensive, can be useful too. It is expensive, to be sure, but doctors didn't make it so. It is the natural consequence of an inflationary economy and scientific advancement.

Everybody understands about inflation, at least to the extent that a dollar has shrunk to less than half its size in 1939.

Scientific progress—with the attendant increase in cost of medications and hospitalization—can be understood too, if it is explained. People are surely aware of new drugs and new operations—they read about them almost daily—and people expect to receive the benefits of these discoveries. It is as natural and predictable that modern medical care costs more than it did 20 years ago as it is that a 1957 model car with automatic transmission and power features costs more than its less luxurious predecessor. In both cases, the cost is higher but the product is better.

Doctors can be as realistic as drug stores and automobile salesmen—by agreeing that costs are, in fact, high and also by pointing out the benefits that accrue from modern health care. Neither denial of facts nor defensive argument will settle anything. The realistic—the positive—approach will.

Louis F. Rittelmeyer, Jr., M.D.

THE HEAVY SMOKER

The cigarette is on new trial as it relates to human health and especially to cancer of the lung. It is estimated that about three million per year more are taking up smoking, that 73 per cent of men are smokers and 33 per cent of women.

Lung cancer is on the increase. According to Dr. Northrup cancer of the lung is fatal in about 95 per cent of all cases, and the death rate in cancer of the lung is 64 times greater in the heavy smoker, two packs a day or more, than it is in the smaller. It would seem that cancer is more common in cigarette smokers than in cigar and pipe smokers.

Cancer is now causing about a quarter of a million deaths in this country each year, or around

13 per cent of all deaths, and cancer of the lung causes about one tenth of these. Heavy smokers past 45 years seem to have about one chance in ten of dying of cancer of the lung.

The exact cause of cancer is yet the greatest challenge to the medical profession, but right now it would seem that the safest route for men and women past forty or fifty is not to smoke at all.

The tobacco research committee seems not to have found evidence that tobacco contributes to the origin of lung cancer, but the Public Health Service thinks that excessive smoking is one of the causative factors in cancer of the lung.

Open-minded research will continue to seek for the unmistakable truth.

Cigarette smoking presents some problem even if it does not cause cancer of the lung, or add to the number of deaths of cancer of the lung. Two packs of cigarettes per day is counted heavy smoking. It is estimated that 73 per cent of men and 33 per cent of the women are smokers. Then we must have about eighty-five million people who smoke, and at fifty cents per person per day we would have the nice little sum of forty million dollars per day for cigarettes, or fourteen billion dollars per year, or about 85 dollars per person per year.

PRESIDENT'S PAGE

You will read with interest and profit the President's page in the journal. The presidency of our state medical association is quite a big job. It offers fine opportunities for service. Dr. Nelson is putting himself into the job with vim and vigor. As he travels over the state from one medical society to another he can see the good and the bad, the accomplishments and the needs. And through his page in the journal we can all benefit by same. He can help no little to bring about unity of thought and better understanding.

NORTHEAST MISSISSIPPI SOCIETY MEETS

The Northeast Mississippi Medical Society is holding its third quarterly session in Tupelo, September 10. This is a night session again. This plan of a dinner followed by the scientific meeting at Tupelo is being tried out and promises to be a successful innovation.

Dr. Thomas P. Webb of Calhoun City is the active and able president of the society this year. Dr. Webb operates a good general hospital at Calhoun City, and is an able man in general medicine and surgery.

VOLUNTARY HOSPITAL INSURANCE

Voluntary hospital insurance has served hospitals, doctors and patients exceedingly well thus far. The people are becoming more and more insurance-minded and hospital-minded as well. Insurance companies are improving their coverage. In this state the Blue Cross-Blue Shield has served mighty well. The people are looking for complete coverage for sickness, for surgery, for the hospital. and for the doctor. Many may be expecting too much for the amount they pay. It would seem sensible for more minor surgery to be taken care of in the doctor's office, both emergency and elective. The doctor, the hospital, and the patient might reason together and arrive at the needed adjustments.

DR. SPIES EARNS DS AWARD

The House of Delegates of the American Medical Association voted the 1957 Distinguished Service Award to Dr. Tom Douglas Spies, head of the Department of Nutrition and Metabolism at Northwestern University Medical School, Chicago, and director of the nutrition clinic at Hillman Hospital, Birmingham, Ala., "for his outstanding contribution to the science of human nutrition". Dr. Spies is certainly deserving of this signal honor from the American Medical Association. We of the South are very proud of him. He is not only one of this nation's great scientists, but he loves his fellowman. His heart is warm, kind, and generous.

MISSISSIPPI AGP MEETS IN JACKSON SEPT. 18

Make your plans to attend the Academy of General Practice in Jackson at the Heidelberg, September 18 and 19. The program is going to be unusually good. We would expect this with Dr. A. V. Beacham as president. He is one of Mississippi's ablest general surgeons and general practitioners of medicine. He loves medicine. He knows hospitals and hospital administration, and gives most freely of his time to aid organized medicine.

SMA GROUND-BREAKING FOR NEW HOME

The ground breaking for the Southern Medical Building has now been celebrated and this fine facility is assured. It is to be located in the city of Birmingham which is well located for the headquarters. It has the Southern Medical atmosphere, a major portion of which has been generated in this city by personalities like Harris, Dabney, Loranz, Spies, Rucker, and Turlington. Birmingham is well balanced with Southern culture and refinement, with a cosmopolitan population and growing industry, its great iron and steel industry having been an economic factor for decades. It is a growing medical center and has a fine medical atmosphere.

For the dissemination of scientific medicine, good fellowship and general lift, the Southern stands at the very top in medical organization. In membership it also ranks near the top.

SMA TO MIAMI BEACH IN NOVEMBER

It is time to mark your calendar for the Southern Medical Association at Miami Beach in November. This year Mississippi has the presidency, Dr. J. P. Culpepper of Hattiesburg. We should give him a big turnout from Mississippi.

MENTAL ILLNESS

Mental illness is taking on big proportions in the field of medicine. The tranquilizing drugs, newest adjunct to treatment in this field, are rendering a good service. The ancient plan was to confine the patient, even chain him if need be. Occupational therapy came on. It is still in use. Punishment all along has had its part. But now the idea is to make the patient happy and comfortable, prescribing activity—with recreation, occupational therapy, and group participation. A hospital of small units with an out-patient clinic seems to be the trend. In time our central hospital in Jackson may work with clinics over the state to discover mental illness in the early stages and, as in other fields of medicine, prevention will become the big challenge.

FAMOUS TEAM

Mississippi has two outstanding men in the field of medicine who have served long and well. Retirement for them is not far away. They have rendered great service for our state and their renumeration in money has been small, compared to services rendered. They have not only served well their state, but the magnitude of their service has reached around the world. They have been experts of application of the best known in their respective fields.

Dr. Henry Boswell has served for forty years or more as superintendent of our state sanatorium for tuberculosis. The campaign against tuberculosis in our state has been dramatic. The educational values that have spread from this institution have been effective and far-reaching.

In the field of public health in constructive planning and efficient application, Dr. Felix J. Underwood has made an unequalled record for his state and nation. He has served efficiently for more than 33 years.

Both of these men deserve some relief from their strenuous activities. But they are not the type of men to welcome retirement. Their knowledge and wisdom should continue to be utilized for great good and in a way that would be less arduous for them.

OCTOGENARIAN PLUS

We want to offer our cordial congratulations to Dr. Jim Hill of Corinth on celebrating his eighty-fifth birthday. He is still active and alert in the practice of medicine. He loves it and more than this the people won't let him quit. They call on him, and out over the town or country he goes. He puts service above self. Dr. Jim is the embodiment of medical integrity and a citizen interested in every good cause for the community. He has served well in the state legislature and has contributed consistently to organized medicine. Good wishes to Dr. Jim for at least fifteen more years of successful living. He is a member of the Fifty Year Club.

DR. WALDREP

The passing of Dr. N. C. Waldrep of Tishomingo took from our ranks one who has served well and faithfully. He was 80 years old and he served his people to the last. Dr. Waldrep was a member of the Fifty-Year Club and was proud of his membership. He had a fine professional mind and kept well informed in his field of general practice. He was a lover of his home, his town, and his church. A progressive citizen, he always did his part for the good of the community, a delightful friend full of optimism.

The passing of Dr. Waldrop leaves the little town of Tishomingo without a doctor. The good people of this town deserve a good doctor.

THE ANNUAL GULF COAST CLINICAL SOCIETY

Meeting will be held October 17 and 18, 1957, at the Buena Vista Hotel in Biloxi, Mississippi. The guest speakers who have accepted invitations thus far include: Dr. Eugene Stead of Duke University; Dr. William Parsons, University of Virginia; Dr. Richard E. Wolf, Childrens Hospital, Cincinnati; Dr. Walter Sheldon, Emory University;

Dr. Robert Knight, Campbell's Clinic; Dr. Jacob Greenhill, Chicago; Dr. Arthur Kretchmar, Oak Ridge Institute. Two general surgeons will also be invited to the meeting as speakers.

Any doctor of medicine in Mississippi, Alabama or Florida, who is a member in good standing of his local county society or who is a medical officer in the service of the U. S. Government, is eligible for membership by the payment of the annual dues of $7.50, which include entertainment.

MISSISSIPPI CHAPTER

The Mississippi Chapter of the American College of Surgeons will hold its annual meeting at the Heidelburg Hotel, in Jackson, November 1 and 2. The professional program will include papers by Dr. Rawley Penick, New Orleans, Louisiana; Dr. Dean Wallace, Little Rock, Arkansas; Dr. Dawson B. Conerly, Hattiesburg; Dr. William Thornton, Meridian; Dr. Ed Hamilton, Gulfport; and Drs. D. T. Brock and Eugene Hesdorffer, Jackson.

The social program will include a dinner Friday evening, a luncheon Saturday and the unprecedented opportunity to attend two outstanding football games—State vs. Tulane, Saturday afternoon and Ole Miss vs. Houston, Saturday evening.

All physicians are invited and urged to attend all the professional and social meetings.

ACADEMY OF PSYCHOSOMATIC MEDICINE

The Academy of Psychosomatic Medicine will hold its fourth annual meeting at the Morrison Hotel in Chicago October 17-19, devoted to "Psychosomatic Aspects of Obstetrics, Gynecology, Endocrinology and Diseases of Metabolism". The meeting will be open to all scientific disciplines, as well as psychologists, social workers and nurses. Information may be obtained from Dr. William S. Kroger, Secretary, 104 South Michigan Avenue, Chicago 3, Illinois.

NELSON . . . .

(continued from page 92)

. . . be sure the policy is written in the so-called standard form of the National Bureau of Casualty Underwriters with all settlement options accruing to you, the assured doctor.

. . . buy enough coverage—it's just not for sale when you need more.

Millions of words have been written on liability prevention. Your local society and MSMA can give some help but the best prevention is practiced in the physician's office. In event of a suit—threatened or actually filed—a physician should inform his Councilor without delay.

But pending the fruits of medicine's organization efforts at education and prevention, take no chances with professional liability coverage moneywise. If you do, it might be the most expensive dollar you ever saved.

Howard A. Nelson, M.D., President

Two resolutions favoring compulsory inclusion of physicians in the federal Social Security system and another one calling for a nationwide referendum of AMA members on this issue were rejected.

ANNOUNCEMENTS

Anthony P. Jerome, M.D., announces the removal of his office to Suite 939M, Physicians and Surgeons Building, 899 Madison Avenue, Memphis, Tennessee, for the practice of plastic and reconstructive surgery.

Fayette C. Williams, D.D.S., announces the opening of his office, practice limited to orthodontics, 503 Williams Building, Corinth, Mississippi.

Bruce M. Sutton, M.D., announces the opening of his office for the practice of Neuro-Psychiatry, Suite 302, Medical Arts Building, 1151 North State Street, Jackson, Mississippi.

Drs. R. R. Braund, J. D. Pigott, and J. M. Chisolm announce the association of Luby Jones, M.D., in the practice of general surgery, 1118 Madison Avenue, Memphis, Tennessee.

S. Gwin Robbins, M.D., and William E. Denman, Jr., M.D., announce the association in practice with Theodore T. Myre, M.D., for thoracic surgery and cardiovascular surgery, 899 Madison Avenue, Memphis, Tennessee.

George A. Riley, M.D., announces the opening of his office at 1085 Madison Avenue, Suite 200, Memphis, Tennessee, practice limited to surgery.

DEATHS

DR. H. L. LEWIS

Dr. Henry Leander Lewis, prominent physician and an outstanding citizen of Amite County, Mississippi, passed awya in the early morning hours of May 17.

Dr. Lewis, son of William Henry and Teresa Morris Lewis, was born August 21, 1867, at Lewiston, Louisiana. He attended local schools, Gillsburg College, Louisiana State and Tulane University and received his medical degree from Louisville Medical College, Louisville, Ky. He returned to Tulane periodically for refresher courses in the profession of his choice.

Dr. Lewis came to Mississippi in July, 1892 and located at Street where he practiced medicine continuously for more than sixty years.

On September 20, 1894, he and Miss Katherine Victoria Street, daughter of Thomas Parke and Katherine Norwood Street, were united in marriage.

Dr. Lewis, a faithful member of Unity Presbyterian Church since 1893, served as deacon and for the last 25 years as an elder. He was a member of Lodge 37 F. and A. M. of Liberty, the county and state medical associations and was on the Medical Staff of Field Memorial Hospital. He served on the Amite County Examining Board during World Wars 1 and 2 and was on the Democratic Executive Committee for many years.

His survivors include his widow, four sons, Henry L., Jr., Thomas S. and Charles D. of Street, Miss., James B. of Jackson, Miss.; four daughters, Mrs. Robert P. Briscoe, Naples, Italy, Miss Pearl Lewis, Street, Miss., Mrs. W. Edwin Conger, Oak Ridge, La., Mrs. Allison R. White, Starkville, Miss., and sixteen grandchildren; one brother, James M. Lewis of Lewiston, La., and a number of nieces and nephews.

DR. R. H. BIGGS

Dr. Ray Hoyt Biggs, 51, died July 12 at Mississippi State Sanatorium, where, up until he became ill a year ago, he was assistant superintendent and medical director.

A graduate of Central High School, Jackson, he received his A.B. degree from the University of Alabama, medical certificate from the University of Mississippi, M.D. degree from Emory University in Atlanta and served 18 months' internship at Sitkin Memorial Hospital in Neptune, N. J.

A medical officer for CCC camp in Vicksburg 1935-36, he received a master of public health degree from John Hopkins University in Baltimore. He became a member of the staff at Sanatorium in 1939.

Biggs was a member of the Central Medical Society, the state medical society, American Medical Assn., American Trudeau Society, Mississippi Trudeau Society and the American College of Chest Physicians.

Survivors include his widow, Mrs. Edwina Ozier Biggs; daughter, Patricia Biggs, Sanatorium; and his mother, Mrs. Clyde E. Biggs, 1025 Central St., Jackson.

DR. E. J. BANKS

Services for Dr. Eldridge J. Banks, 85, retired physician on the Ellisville Mental Hospital staff, and former Jackson physician, were held July 30.

Banks died Monday in Jackson at the home of his daughter, Mrs. W. Hampton King, 404 Colonial Circle, where he had been visiting.

A native of Tippah County and former resident of Baldwyn, Dr. Banks had been a resident of Ellisville for the past 15 years. He was associated with the hospital there until his retirement two years ago.

He was a member of Ellisville Methodist Church, a Mason and Shriner, a past Worthy Patron of the Order of Eastern Star, and a former long-time Rotarian.

Survivors are two daughters, Mrs. King, Jackson, and Mrs. Edgar Martin Crane, Yazoo City; and two sons, Thomas V. Banks, Boston, Mass., and Yates R. Banks of Jackson.

HANDY HOLDER

Inventions, often the product of accident, are sometimes born in desperation.

That is what happened to Eli Kahn, 5411 N. Clark Street, Chicago, when his wife gave birth to their first baby boy.

After the first month of joy in their new addition, Eli was left alone with Philip, and in trying to feed and diaper the bouncing bundle that was his frantic son, he discovered he was all thumbs.

"Gosh," the befuddled daddy said to himself, "if I only had a third arm!"

Right then and there, an idea was born. You could almost see the electrib bulb lighting up inside Eli's head. Somehow, he managed to feed and tend the tot, until his wife arrived to rescue him. The Chicago salesman of steel products barely heard the scolding his wife gave him for trailing dirty diapers over their brand-new couch.

He rushed downstairs, and, in the murky light of the basement, began cutting and shaping a piece of steel. When his wife came down to look for him three hours later, Kahn, his face smeared with perspiration and his arms littered with steel shavings, grabbed her up in his arms.

"Eureka," was all that he could say. "Eureka," he shouted, "I found it."

Impatiently, his wife asked: "Found what?"

"Look," he said, as his wife watched, and he took a baby bottle, fastened it on the clamp of his steel contrivance, and showed how it could be manoeuvered in any direction for a complete circle, at any angle.

And—that's how an invention was born—"The Third Arm"—as Eli and his wife fondly call it, and which they constantly use in feeding the baby. And so—another industry was born, and a salesman was converted into the city's newest manufacturer.

In addition, the proud father and his wife have found a multitude of uses for—"The Third Arm," including its function as a phone-holder and a mirror-holder.

BOONEVILLE NURSING HOME

Our policy is to meet the individual needs of the sick and aged, to give the best care to the sick, aged and convalescent.

We also will be prepared to care for surgical patients, invalids, and patients requiring special diets.

Pleasant surroundings — Television — furnace heat — air conditioning — picnic grounds.

Booneville Nursing Home, Phone PArk 8-5929, Ozelle Mullinex, Operator, 302 Bridge Street, Booneville, Mississippi.

GIVE YOUR PRACTICE

A Better Chance to Grow

Equip your Office, Clinic or Hospital, with X-ray, EKG or Physio-therapy equipment.

Here are listed some bargains in Demonstrators and Reconditioned Used Equipment. If you will fully investigate you will learn what really *good "buys"* they are. We are loaded with Used Equipment recently obtained by us from installations of new Keleket units. We want to move this used apparatus and have placed bargain prices on each unit.

There is a type and capacity unit listed for every type requirement.

General Electric 200MA Complete Diagnostic X-ray Unit.
General Electric 30MA Mobile Unit.
Aloe 50MA Vertical Fluoroscope (Radiographic type)
Continental 30MA Vertical (Fluroscopic only)
Fischer 15MA Mobile Unit
Profex 25MA Mobile Unit
2—Westinghouse 30MA units (Good for Urological setup)
Westinghouse Floor-Ceiling Tubestand (Almost new)
Keleket 15MA Mobile unit
Keleket EENT Head X-ray Unit complete (Used 1 yr. Doctor died)
General Electric 100MA Self-Rectified Diagnostic Unit.
Universal 15MA Little Giant Mobile Unit
Keleket 30MA Generator, Type FD, Unit (Ideal for Urologist)
2—Flat Non-Tilt X-ray Tables with Bucky Diaphragm.
Electrocardiograph — General Electric Cardioscope
Electrocardiograph — Beck-Lee Cardiall

DEMONSTRATORS AT REDUCED PRICES

1—MedcoSonlator
1—Raytheon Microtherm
1—Raytheon Ultrasonic unit
1—Birtcher Ultrasonic unit

For further information write, phone or telegraph collect to Jim Krichbaum, Vogel X-ray Company, 3521 Wheatley Drive, Jackson, Miss., Phone 5-4421, or to—

VOGEL X-RAY COMPANY

Ph. BR 2-2419 1114 Union Ave. Memphis

Concealed Abdominal Hemorrhage

HARWELL WILSON, M.D.†
Memphis, Tenn.

Hemorrhage into the free peritoneal cavity in the absence of a penetrating wound is a serious cause of abdominal pain and of shock resulting from a decrease in the circulating blood volume. The early recognition of concealed intra-abdominal hemorrhage is very important if the patient is to be relieved of severe pain and death from concealed blood loss. It behooves all physicians to be familiar with the causes of intra-abdominal hemorrhage in order that the condition may be recognized without delay and proper treatment instituted. There are many conditions which may cause concealed intra-abdominal hemorrhage. Some of the most frequent causes which will be considered in some detail are: traumatic rupture of the spleen, fracture of the liver, tubal pregnancy, bleeding corpus luteum cyst of the ovary and aneurysm of the abdominal aorta. A number of other conditions may occasionally result in the accumulation of free blood in the peritoneal cavity such as ruptured bleeding peptic ulcer of the duodenum or perforated Meckel's diverticulum which is also associated with bleeding and rupture of an aneurysm of the splenic artery.

SYSTEMIC SYMPTOMS OF CONCEALED BLOOD LOSS

The patient who has experienced a severe hemorrhage into the abdominal cavity exhibits symptoms similar to those shown by the patient who has had a large external loss of blood. In the earlier stages, vasoconstriction, a normal defensive mechanism of the body occurs and, thereby, maintains a normal blood pressure. Even at this stage, however, there is usually an increase in the pulse rate and the pulse volume becomes decreased. As the bleeding continues, pallor develops and of course eventually when the patient goes into a state of shock as a result of blood loss, the skin becomes cold and clammy, the pulse rate faster and more thread-like in quality and, finally, there is a fall in blood pressure. Mentally, in the early stages of this condition, the patient may show evidence of apprehension, later there may be some disturbance in the sensorium and the patient will lose consciousness if the hemorrhage is severe enough and continues long enough. The treatment is two-fold, namely to control the source of bleeding and to replace the blood loss.

TRAUMATIC RUPTURE OF THE SPLEEN

Traumatic rupture of the spleen in most instances is followed by immediate intraperitoneal hemorrhage. In about 15 per cent of the cases, however, the hemorrhage is delayed. In the majority of instances where the patient suffers from a ruptured spleen there is a history of rather severe trauma such as an automobile accident or a fall from a laddeer. In such instances it is not uncommon to find a contusion of the left chest or flank region or ribs which are fractured on the left side. This is not always the case, however, since such an individual may have had the splenic capsule or the vascular pedicle of the spleen torn from what seems to be a relatively minor accident or fall, such as slipping in the shower or falling in the bathtub. It is also true that occasionally a very large spleen that formerly was frequently seen in patients with malaria may rupture after a very mild degree of trauma. The spleen which has a very long pedicle, the so-called wandering spleen, has also been known to shear itself away from its vascular pedicle supposedly by virtue of the weight of the organ itself pulling upon the veins and arteries which support it.

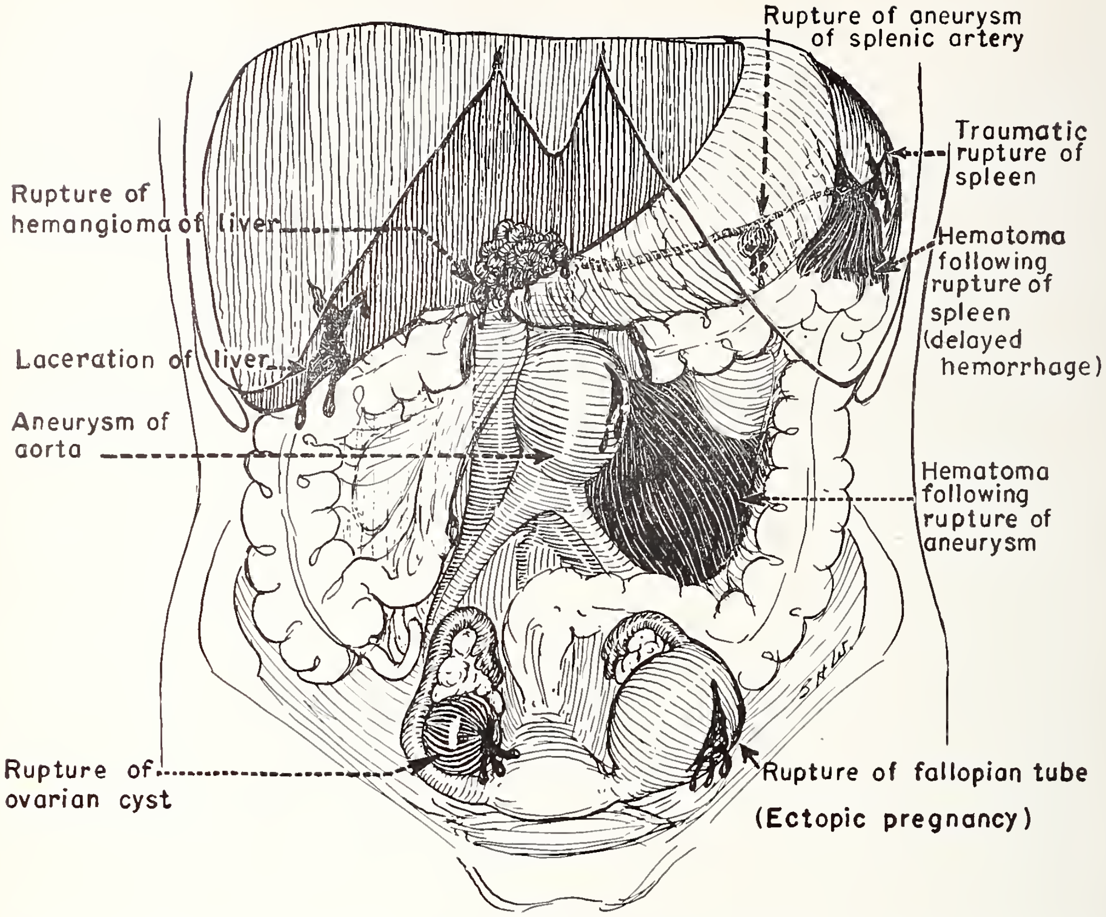
Delayed hemorrhage from traumatic rupture of the spleen occurs in about 15 per cent of all patients who have traumatic rupture of this organ. In such instances there is usually a tear of the splenic capsule or a subcapsular tear in the spleen which causes a gradually enlarging hematoma to form. This hematoma may be walled off for a time by the omentum, stomach and transverse colon. In some instances the hematoma is palpable as a large tender mass in the left side of the abdomen. When the pressure becomes great enough, or when some sudden change in the position of the patient causes the wall of the hematoma to break down, serious and uncontrolled bleeding may immediately occur into the free peritoneal cavity. Instances of this type have been known to occur from a few hours to a few months after the original injury.

FRACTURE OF THE LIVER

Lacerations of the liver not infrequently follow automobile accidents and other types of serious injury. A deep laceration of the liver is very apt to be followed by a severe hemorrhage into the abdominal cavity. All of the signs and symptoms of shock due to blood loss may make their ap-

---

†Department of Surgery, University of Tennessee, Memphis; Baptist Memorial Hospital; and John Gaston Hospital, Memphis, Tennessee.


Rupture of aneurysm of splenic artery
Traumatic rupture of spleen
Rupture of hemangioma of liver
Hematoma following rupture of spleen (delayed hemorrhage)
Laceration of liver
Aneurysm of aorta
Hematoma following rupture of aneurysm
Rupture of ovarian cyst
Rupture of fallopian tube (Ectopic pregnancy)
SHW.

ence of some inflammatory lesion in the abdomin- pearance rather rapidly. It is important in such instances that the liver be repaired, usually with large through and through sutures of the heavy type of material such as No. I chromic catgut which will not easily cut through the liver capsule. Gelatin foam is useful in such injuries. However, one can rarely depend upon this material alone to control an extensive laceration of the liver. In the event that the hepatic artery itself is torn and has to be ligated, or in the event that large areas of the liver need to be controlled by suture, it is wise to give these patients large doses of antibiotics during the postoperative period in order to lessen the chance of anaerobic infection. It is also important to drain the abdominal cavity in such instances since bile may drain into the peritoneal cavity and, if this is not released to the outside, will cause a bile peritonitis.

RUPTURED TUBAL PREGNANCY

One of the most serious causes of severe intraperitoneal hemorrhage is tubal pregnancy. This not infrequently occurs in an individual who has missed one period but who did not realize she was pregnant. There is frequently severe lower abdominal pain associated with the signs and symptoms of severe shock. Blood can usually be demonstrated after a puncture has been made into the cul-de-sac. However, in a patient whose symptoms strongly suggest ectopic pregnancy with hemorrhage, it is probably best to proceed with immediate operation at the same time seeking to replace the blood loss. The bleeding in ectopic pregnancy is not always massive. In some instances only a small amount of blood leaks out of the tube for a time producing pain and calling attention to difficulty in the lower abdomen. In such an instance it is possible to operate upon the patient before shock occurs.

BLEEDING OVARIAN CYST

A cyst of the ovary may rupture into the peritoneal cavity. If it is on the right side, this may frequently cause symptoms strongly suggestive of acute appendicitis. In an occasional instance, the hemorrhage from a ruptured cyst of an ovary may be severe enough to cause the patient to go into a state of shock. More frequently, however, the bleeding is not of this severity and the abdominal pain is more likely to suggest the presal cavity. In the majority of such cases, after the abdomen is opened, it is possible to evacuate the hematoma and to repair the ovary with a continuous suture which controls the bleeding and at the same time saves the ovary.

ANEURYSM OF ABDOMINAL AORTA

Aneurysms of the abdominal aorta, unless resected as an elective procedure, usually continue to enlarge until rupture occurs. Most frequently the perforation of the aneurysm is posteriorly and on the left side. This usually produces severe pain with an enlarging hematoma. There is usually a period of hours between the time that the aneurysm ruptures through its capsule and the time that it is likely to rupture into the free peritoneal cavity. In fact, in a number of cases, the bleeding continues to be retroperitoneal, and, while this produces symptoms of very severe pain in the abdomen, the patient may actually bleed to death without rupture of the aneurysm into the free cavity. In some of the patients I have operated upon for rupture of an abdominal aortic aneurysm, the pelvis has been filled with blood, whereas in other cases the retroperitoneal tissues were simply greatly distended by an enormous hematoma extending from the vessels down to the pelvis. A number of patients can be saved by immediate operation with resection of the aneurysm and replacement by a graft even at this stage. Strangely enough, in our experience, the majority of patients operated upon for this condition who have not survived, have succumbed as a result of kidney failure rather than from blood loss.

OTHER CAUSES OF CONCEALED INTRAPERITONEAL BLEEDING

There are many conditions which occur very rarely, but which may result in severe intraperitoneal bleeding. These conditions occur so infrequently they are rarely diagnosed, but the patient is operated upon because he presents the findings of an acute surgical abdomen. Hemangiomas of the liver have been known to rupture after slight trauma. Very rarely a ruptured peptic ulcer of the duodenum or in a Meckel's diverticulum may be associated with severe bleeding into the general peritoneal cavity. Severe hemorrhage may result from a ruptured aneurysm of the splenic artery.

SUMMARY AND CONCLUSION

1. Concealed intra-abdominal hemorrhage is a serious condition which requires immediate recognition and appropriate therapy if the patient's life is to be saved.

2. The symptoms and signs of hypovolemic shock from concealed hemorrhage are similar to those seen in patients who lose a large amount of blood externally.

3. The abdominal pain associated with this condition and the associated tenderness and rigidity of the abdominal musculature is due to irritation of the peritoneum.

Medical Education in the Changing World, by Doctor Willard C. Rappleye, Dean of Columbia Medical School, is an interesting and informative discourse with a timeliness. Some quotations from the report: "The provision of adequate health service is one of America's most essential industries."

"Medical education is crucial because it is the source of supply of physicians and other professional workers as well as the base for the advancement of knowledge to meet the future health needs of the country."

"The keystone in the arch of adequate health service is the physician. There is no substitute for him and the only source of supply is the medical schools. Hence, medical education must be the concern of every segment of our national economy."

"Research is the life blood of medical education."

"Every effort is being made to implement and apply the latest concepts of medical responsibility. This grows out of the recognition that the crucial element is the individual student, upon whose character, attitude, preparation, ability and industry so largely depend the results of his professional training. The continuation education of the physician has been strongly emphasized as an essential element in a well balanced medical service."

Dr. Rappleye concluded his report and discussion by acknowledging aid from the Ford Foundation Grant.

Carcinoma of the Breast*

R. W. POSTLETHWAIT and C. E. GARDNER†
Durham, N. C.

Carcinoma of the breast is the most common malignant tumor occurring in women, being twice as frequent as carcinoma of the cervix. Although many aspects of carcinoma of the breast are of interest, only diagnosis and treatment will be considered here. Recent controversy suggests a review of treatment in particular might be indicated.

The symptomatology of tumors of the breast is relatively uncomplicated, a lump being the predominant complaint. Pain is a common symptom in cystic disease, but less frequent in carcinoma. Nipple displacement or retraction, dimpling, redness or edema of the skin, serous or bloody discharge from the nipple, and eczema of the nipple may be complaints at times. The patient may note an axillary or supraclavicular mass, ulceration, multiple skin nodules, shrinkage of the breast, back pain, weight loss and other similar symptoms indicating advanced disease.

The plea for earlier and more accurate diagnosis has been made so often that repetition of this seems almost trite. Yet, in a recent analysis of a small group of patients with breast malignancy, four per cent were told to "forget it" by the first physician consulted concerning the lump in the breast. Not all of the patients were properly advised, but at least they were not dismissed. A review of the examination of the breast would therefore appear advisable. In this regard, credit should be given Haagensen[1] for his many excellent contributions.

As growth of a carcinoma in the breast takes place, a mass will obviously be formed. In addition, however, the suspensory ligaments and the ducts of the breast are involved and one or both of these structures may be shortened. The essential change then is that the tumor occupies relatively less space than the normal breast tissue occupied earlier in the same area. As a result, three groups of physical signs may be present: those signs pertaining to the mass itself, the retraction signs, and the fixation signs.

The mass may be felt in any portion of the breast and the area to be palpated extends from the clavicle above to the costal margin below, from the midline of the sternum medially to the posterior axillary border laterally. About forty-five per cent of the tumors will be in the upper and outer quadrant, and the axillary prolongation of breast tissue should be carefully palpated. Approximately twenty-five per cent will be in the central area of the breast, ten per cent in the lower outer quadrant, ten per cent in the upper inner, and five per cent in the lower inner. Systematic, gentle palpation will usually locate the mass. At times, the patient may have felt a lump which the physician is unable to find; these patients should never be dismissed until repeated monthly examinations have been made.

The dominant lump of carcinoma is usually firm or hard. Very cellular lesions may be soft or a cystic process may overlie or surround a carcinoma. The edges are poorly defined and the tumor has none of the marked tendency to slip away from the examining finger which is so characteristic of fibroadenoma. The size and exact shape are extremely variable. In palpating a mass, therefore, location, size, shape, consistency, character of edges and movability are noted.

Inspection of the breast alone will frequently provide a reasonably accurate appraisal of early carcinoma of the breast, as the retraction signs can usually be demonstrated without palpation. The basis of these signs is illustrated in Figure I. The suspensory ligaments are attached to the pectoral fascia and to the skin; a malignant tumor shortening one or more of these ligaments will tend to bring into closer approximation the two structures joined by the ligament. With the patient supine, the breast tissue flattens out over the chest wall and the suspensory ligaments are relaxed. If the patient sits up, the breast drops, the involved suspensory ligaments cannot elongate and the shortened ligament will be manifested by a dimpling of the skin. Elevating the arms, contracting the pectoral muscles, and bending forward will accentuate this sign. Skin dimpling or retraction may be demonstrated also by fixing one of the three points and moving another, as by fixing the tumor and moving the skin gently over it. Essentially the same maneuvers apply to the demonstration of nipple displacement and retraction.

Early fixation to the skin or to the pectoral fascia can be noted by fixing one or the other and gently moving the tumor, or by fixing the tumor between the palpating fingers and moving the skin or having the patient contract the pectoral muscles (see Figure 1). The axillary and supraclavicular regions are carefully palpated for lymph node enlargement. The later signs of breast carcinoma such as edema of the skin, ulceration, satellite nodules, and rigid fixation will be obvious.

---

*Presented before the sixty-eighth annual session of the Mid-South Postgraduate Medical Assembly, Memphis, Tennessee, February 12-15, 1957.

†From the Department of Surgery, Duke University School of Medicine and the Veterans Administration Hospital, Durham, North Carolina.

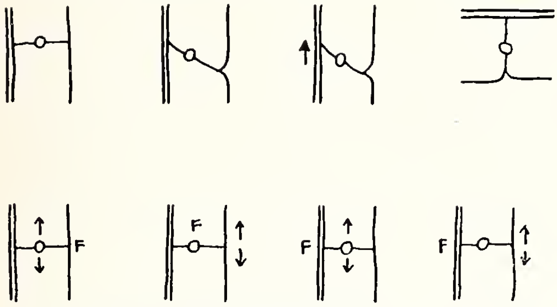


Figure I

Haagensen has repeatedly emphasized the advisability of every physician developing a routine method for examining the breast completely, and he describes in detail the sequence of the various maneuvers. A large number of malignant tumors would be found earlier if such examination was routinely performed. Since essentially every dominant lump in the breast must be removed for diagnosis, some may feel that this thorough examination is unnecessary, but a more accurate concept of the mass will allow more intelligent advice to the patient.

Several aspects of the treatment of carcinoma of the breast should be considered: the selection of patients for radical mastectomy, the role of simple mastectomy and irradiation, and the advisability of more radical operation. The radical mastectomy as first performed by Halsted has been considered the most nearly ideal cancer operation as this procedure removes the cancer with a wide margin of normal tissue, the first and major lymph node groups, and the intervening lymphatics. Properly performed with a wide margin, thin skin flaps, clean and sharp axillary dissection, and gentle handling of tissues, the Halsted radical mastectomy remains an excellent operation. The selection of patients who should have this procedure has been a problem. Several methods of staging have been suggested, both as an aid in prognosis and to help select the correct therapy.

In 1943, Haagensen and Stout[2] first published their criteria of operability, and these have recently been reviewed by Haagensen[3]. The only major change has been the omission of carcinoma developing during pregnancy or lactation as being categorically inoperable. Briefly, the following contraindicate radical mastectomy; 1) distant metastases, 2) edema over more than one-third of the skin of the breast, 3) satellite nodules in skin of breast, 4) inflammatory carcinoma, 5) edema of the arm, 6) presence of supraclavicular metastases, 7) proved metastases to internal mammary or apex of axilla nodes and 8) when any two or more of the following grave signs of locally advanced carcinoma are present; a) skin ulceration, b) limited skin edema, c) solid fixation of tumor to chest wall, d) axillary nodes measuring 2.5 cm. or more in transverse diameter, and e) fixation of axillary nodes to skin or deep structures. About a fourth of the patients will be inoperable according to the clinical aspects of the above. Certain patients, depending on size and location of the tumor, size, location, and number of nodes, and presence of any one grave sign, are subjected to biopsy of an internal mammary node or the highest axillary node by Haagensen. Positive nodes in these locations will eliminate approximately another fourth of the patients. Therefore, about one-half of all patients seen are suitable candidates for radical mastectomy, depending on patient selectivity in various areas and clinics. If the object of radical mastectomy is to cure the patient, then proper selection would appear to be an intelligent approach.

At our hospital, the criteria of operability as developed by Haagensen and Stout have not been strictly observed. Inflammatory carcinoma have been removed by radical mastectomy. In a number of cases, more than one of the grave signs have been present and radical operation performed. Although statistical evidence suggests otherwise, radical mastectomy as a palliative operation may have a place. Some patients who have been seen after treatment by x-ray therapy come in because of uncontrollable growth in the axillary nodes with resultant massive edema of the arm. Pain and discomfort are intense; these patients would have been more comfortable had radical mastectomy been performed even though the duration of life would probably not have been increased. This is by no means an effort to detract from the correct and justifiable opinion of those who feel that radical mastectomy should be reserved for those patients the surgeon feels he can cure.

McWhirter[4] has been the principal advocate of simple mastectomy followed by irradiation therapy in all cases. He feels that simple mastectomy is curative if the lesion is confined to the breast and that adequate x-ray treatment to the axillary, supraclavicular and internal mammary nodes will provide a better chance of cure than radical mastectomy if lymph node metastases have occurred. McWhirter graciously allowed Ackerman[5] to review the clinical records and pathology of 719 patients who survived five years of a group of 1882 patients treated between 1941 and 1947. Ackerman found that at least two hundred and twenty patients had immediate ovarian sterilization after simple mastectomy, that in others involved nodes were excised, and estrogen or androgen therapy given for persistent disease, all of which were modifying factors making comparison impossible. The incidence of local persistence of disease was higher in operable cases than in the same type treated by operation. The irradiation caused considerable morbidity; forty-seven patients had severe changes, three having had amputation of the arm. Although 719 patients had survived five years, at the time of review 203 were dead, 44 were dying and more will die of cancer. Ackerman stated that McWhirter had not demonstrated histological proof of sterilization of carcinoma in lymph nodes; some metastases removed after irradiation appeared unaffected. Even without Ackerman's interesting report, previous experience would suggest that McWhirter's treatment would not replace radical mastectomy.

The advocates of simple mastectomy followed by irradiation state that simple mastectomy will cure the patient if the lesion is confined to the breast, which is undoubtedly true. They further state that radical mastectomy will not cure patients who have supraclavicular or internal mammary node metastases, which is also true. Two points of difference arise. First, the inference is made that x-ray therapy will destroy all malignant cells, but no proof is offered that this is true, whereas repeatedly, apparently viable malignant cells have been seen in the breast or lymph nodes after a complete course of irradiation. Secondly, with limited lymph node metastases in the axilla, radical mastectomy offers an excellent chance of cure. The presence of lymph node metastases to the axilla, however, can be determined only by pathologic examination of the tissue. It appears obvious, therefore, that for clinically operable lesions, radical mastectomy remains the procedure of choice. The new super-voltage irradiation technics may completely destroy all of the malignant cells without destroying normal tissues, but the generally available x-ray therapy will not do so.

Recently, in addition to the usual radical mastectomy, removal of supraclavicular, internal mammary and even mediastinal lymph nodes has been carried out in some clinics. The results of these more extensive resections will be of considerable interest. At our hospital, Gardner carried out a series of biopsies of nodes in the second intercostal space along the internal mammary artery. If the node was positive, the first, second, and third costal cartilages were cut and the internal mammary chain was resected. The postoperative complications were decidedly increased and this procedure has been given up except for lesions in the more medial portion of the breast. If the lymph nodes in the internal mammary or supraclavicular areas are involved, the possibility of surgical cure is remote. Blood stream metastases will probably have occurred as these nodes are not very effective filters and are located near the entry point of lymph into the venous system.

For palliation of carcinoma of the breast, irradiation has an important role, particularly in the treatment of small, localized recurrence and in the relief of bone pain. Androgen administration, or estrogen in the older age groups, may have a decidedly beneficial, if temporary, effect. Bone metastases in particular may be improved considerably and even soft tissue lesions regress for a time. The place of oophorectomy in the treatment of breast carcinoma is still controversial, but may be of temporary value in the younger woman. Adrenalectomy and hypophysectomy are now being investigated in some clinics and show promise of adding to the presently available means of palliation.

SUMMARY

Earlier diagnosis of carcinoma of the breast may be obtained by a careful investigation of the physical signs of breast tumors and by more thorough breast examination during routine physical examination. Any dominant mass in the breast should be removed. Proper evaluation of each patient will permit more intelligent selection of patients for radical mastectomy or for palliative irradiation therapy.

BIBLIOGRAPHY

1. Haagensen, C. D.: Carcinoma of breast, J.A.M.A. 138: 195-205 and 279-292, September, 1948.
2. Haagensen, C. D. and Stout, A. P.: Carcinoma of the Breast. Criteria of operability. Ann. Surg. 118: 1032-1051, December 1943.
3. Haagensen, C. D.: Diseases of the breast. First edition, W. B. Saunders Co., Philadelphia, 1956.
4. McWhirter, R.: Simple mastectomy and radiotherapy in the treatment of breast cancer. Brit. J. Radiol. 28: 128-139, March 1955.
5. Ackerman, L. V.: An evaluation of the treatment of cancer of the breast at the University of Edinburgh (Scotland), under the direction of Dr. Robert McWhirter. Cancer 8: 883-887, September-October 1955.

The Efficacy of Extended Resection for Carcinoma of the Rectum and Sigmoid*

GEORGE GILLESPIE, M.D.
Jackson, Miss.

In 1908, Mr. Earnest Miles of London, writing *The Lancet* described an abdomino-perineal resection for carcinoma of the rectum and pelvic colon. Although the combined approach had been used earlier, by Czerny in 1884, in this article for the first time the procedure was based on a sound knowledge of the lymphatic spread of the distase; and Miles included in his resection not only the primary lesion but the pathways of lymphatic drainage. The operation has since borne his name and for almost half a century has been considered a standard procedure for the treatment of this malignancy.

During the last 10 or 15 years deviations from this standard have been proposed in two different and opposite directions. On one hand surgeons have concentrated on perfecting less radical procedures designed to save the anal sphincter; on the other they have advocated more radical procedures for advanced lesions. This has raised some interesting and as yet unanswered questions; and it is with this latter aspect of the problem that this discussion will deal.

Two brief case reports will illustrate one of the problems involved:

The first case (Fig. 1) is that of a 54-year-old woman who was found to have a bulky tumor of the mid-sigmoid region adherent to the fundus of the bladder and also to a loop of small bowel. It was treated by *en bloc* resection of these organs, a portion of the bladder being taken. Microscopic examination revealed adenocarcinoma grade III with no involved lymph nodes but with a carcinomatous fistula between the small and large bowel and inflammatory adhesions to the bladder. This patient is still living and well and apparently free of recurrence thirty-two months after surgery.

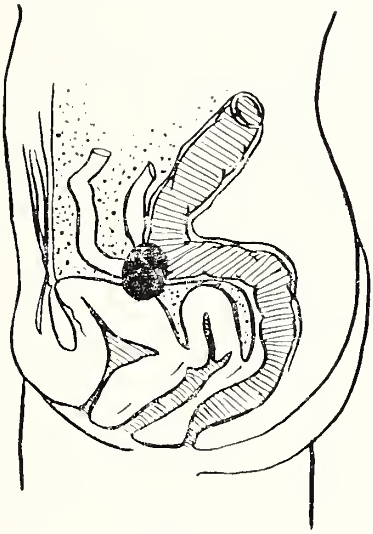


Figure I

The second case (Fig. 2) is similar in principle but varied in detail; a 57-year-old woman presented a tumor of the rectum at the level of the peritoneal reflection intimately adherent to the body of the uterus. This was treated by abdomino-perineal resection with *en bloc* removal of the uterus, both tubes and ovaries. This proved to be a grade II adenocarcinoma, again with all nodes negative. She has been alive and well for four years but within the last six months has developed signs of recurrence in the form of a right lower quadrant mass.

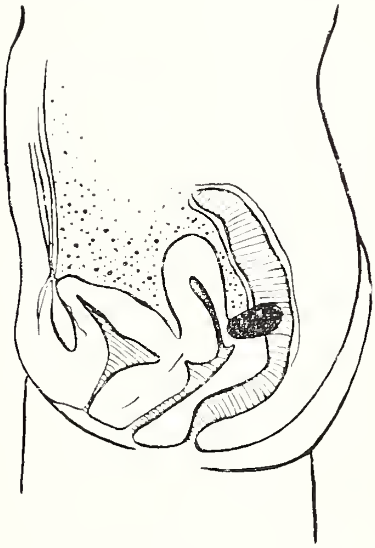


Figure 2

The problem illustrated by both of these cases is that of local extension to adjacent organs. The question is raised as to value of extended radical surgery. Can it be justified? What are the hazards? What are the chances of cure? Every surgeon who undertakes to operate for this condition will be confronted with this problem on occasions. Statistically 12 to 15 out of every 100 patients explored for carcinoma of the rectum or sigmoid—

or nearly one out of six—will present this very problem[1,7].

TABLE I

REPORTED CASES RESECTION RECTAL TUMOR AND ADJACENT ORGANS

Date	*Surgeon*	*Cases*
1903	Schwartz	1
1908	Goullioud	1
1911	Albertin	Several
1924	Chalier	Several
1943	Dixon	40
1946	Sugarbaker	42
1947	Gilchrist and David	35
1951	Bricker	32
1951	Cattell	47
1955	Brunschwig	12

Table 1 is a brief and incomplete list of some of the men who have previously encountered this problem and have related their experiences. Schwartz in 1903 is the first on record; it is not until the 1940's that we encounter familiar names or series of any significance. Let us examine some of their results.

First, as to a question of great importance: *The risk*: The mortality rates for these various surgeons is depicted in Table 2: The earlier rates ranging from 18% - 20% - 25% have been reduced in the last few years to an acceptable figure of less than 10% as contrasted with the average of less than 5% for the standard Miles procedure. The risk undoubtedly increases in proportion to the extent of resection required in the individual case.

Let us examine the 5-year survival rate, Table 3. Not all of the writers give 5-year survival rates but at least four have a significant number of patients that have been followed for 5 years after surgery. Depicted with these for comparison are survival rates given by Coller for some 352 cases subjected to the standard Miles resection, who also have been followed over 5 years. The rate for extended surgery cases averages about 30 per cent and compares favorably with the survival rates for all cases resected. It is definitely higher than the survival rate of those cases with lymph node involvement. This would seem to indicate that direct extension of the tumor is not as deadly as lymph node extension, a fact further confirmed by Coller's figures.

All writers without exception feel that this is one of the features of rectal carcinoma that makes it favorable for extended resections. Although direct extension through the wall of the bowel does adversely affect the prognosis, it is not so bad by comparison as the other pathological signs which are used to determine prognosis. Interestingly enough, it is often not accompanied by any of the other unfavorable signs. We are all familiar with the pathologic findings which indicate poor prognosis—lymph node spread, blood vessel invasion, a high grade of tumor, perineural invasion and direct extension through the bowel wall. Sugarbaker found that in 41 per cent of his cases direct extension was not associated with these other signs. This allows for an increased optimism in the treatment of these lesions.

TABLE II

MORTALITY RATE RESECTION RECTUM AND ADJACENT ORGANS

Surgeon	*Cases*	*Procedure*	*Rate*
Dixon (1943)	40	Recto-Sigmoid and Part of Bladder	18.5%
Sugarbaker (1946)	42	Rectum and One or More Organs	19%
Gilchrist and David (1947)	35	Rectum and One or More Organs	20%
Bricker (1940-51)	32	Pelvic Evisceration (for Rectal Carcinoma)	34%
(1946-51)	22	Same	22%
Brunschwig (1946-50)	100	Pelvic Evisceration (mostly for Cervical Carcinoma)	17%
(1955)	12	Same for Rectal Carcinoma	8%
Cattell (1951)	47	Rectum and Panhysterectomy	4%

Acceptable Mortality Rate for Standard Miles Resection 4 - 5%

TABLE III

5 YEAR SURVIVAL RATE - - - - - - COMPARISON

Surgeon	*Cases*	*Resection*	*Rate*
Dixon (1943)	40	Recto-Sigmoid and Bladder	19%
Bricker (1946)	20	Rectum and Adjacent Organs	25%
Gilchrist and David (1947)	35	Rectum and Adjacent Organs	40%
Cattell (1951)	26	Rectum and Uterus (Total)	38.5%
Standard Miles Resection Coller (1954) 352 Cases		All Cases	44%
		Nodes Negative	55%
		Nodes Positive	23%
		Penetration Through Wall	38%

Another interesting fact that was revealed by these studies relates to our ability grossly to distinguish whether adhesions are inflammatory or neoplastic. When the surgeon is confronted with a locally adherent tumor he wonders whether he can with safety divide the adhesions or whether he should excise both structures. Analyses of three of the above series have been made with reference to this point [7],[10],[18]. The conclusion has been reached that no satisfactory gross appraisal can be made. When the uterus or bladder is adherent, 50 per cent of the cases will show malignant infiltration; with lesions of the recto-vaginal wall, 80 per cent will show invasion; with lesions adjacent to the prostate only 25 per cent show invasion; this latter finding suggests some probable protection from Denonvillier's fascia or the prostatic capsule. On this point of gross appraisal one concludes that when the lesion is grossly adherent, for the purposes of treatment, it must be considered to have infiltrated.

Our conclusion regarding this whole principle of resection of contiguous structures may be summed up as follows:

Whenever *en bloc* removal can be technically carried out, the operative risk balanced against expectancy of cure would seem to justify the undertaking.

Because each individual patient's general condition and life expectancy are variable each case must be individualized.

The final portion of this discussion deals with another controversial but altogether different method of extending the scope of the standard for rectal cancer.

Miles in his original article, previously referred to, differed from his predecessors in emphasizing the value of eradicating the "zone of upward spread of cancer." This zone he included by a wide resection of the sigmoid mesentery and the nodes along the superior hemorrhoidal and inferior mesenteric artery. His point of ligation on this artery is described in his own words as follows: "The inferior mesenteric artery is then ligatured below the point where it gives off its uppermost branch to the pelvic colon."

For the ensuing forty-odd years since the writing of this statement this extent of proximal resection has been accepted as adequate by most surgeons, however, since 1950, several surgeons have advocated an extension of this proximal resection to include the entire inferior mesenteric artery, ligating it at its point of origin on the aorta and thus including in the resection the left colic artery. Foremost among these have been State of Minneapolis, Bacon of Philadelphia, Ault of Washington, and Rosi of Chicago.

Fig. 3 shows the extent of resection which these men advocate.

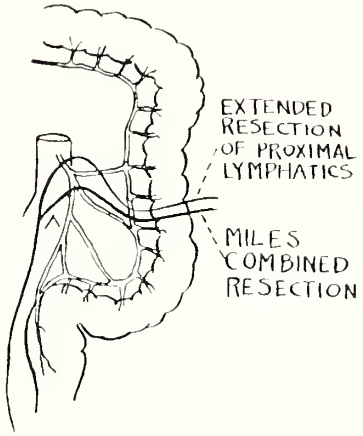


Figure 3

Golighter, writing in *The British Journal of Surgery* in 1954, has demonstrated conclusively that the marginal artery of Drummond is adequate to maintain circulation well down into the descending colon even with the loss of the left colic artery.

Accepting this fact as established, the question of importance, then, is not the technical one of bowel survival but whether the tumor which has reached this level may not have spread more widely. No series of cases having had this procedure carried out have been followed for a long enough time to compare 5-year survival rates. Rosi found involvement of nodes near the origin of the mesenteric artery and above the level of the Miles resection in 22 per cent of cases. However, he does not indicate how many of these also had extension to a higher level, a fact that would, of course, nullify this extended effort.

Golighter and Ault have both made specific contributions in anatomical studies which indicate the exact amount of added lymph node bearing tissue that is present in this additional resection. It is noted (Fig. 4) that the origin of the inferior

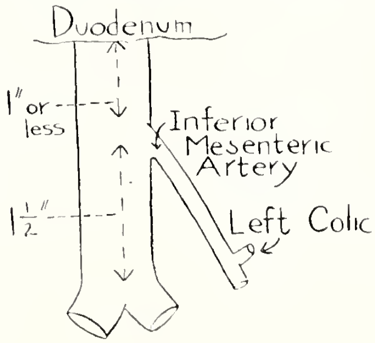


Figure 4

mesenteric artery is 1½ inches cephalad to the bifurcation of the aorta, and that the left colic artery usually comes off at approximately this point. The additional gland-bearing tissue then that might be removed would be approximately 1½ to 2 inches.

That this procedure is technically feasible has been demonstrated beyond this question. Most of the writers on the subject, however, are candid enough to warn that there are difficulties in its performance. Ault states that the greatest handicap is obtaining adequate exposure, and that this is due most commonly to a fat short mesentery. He further states "failure to obtain adequate exposure renders ligation of the inferior mesenteric artery on the aorta most hazardous." Cattell has warned of the dangers of the procedure in citing cases of total left colectomy and states that the complications and increased mortality rate are very real and that their own results in its use have been discouraging.

Our conclusion then regarding ligation of the inferior mesenteric artery at the aorta is that it is technically feasible and may be used in good operative risk cases, however, it is also technically more hazardous and therefore cannot at this time be recommended as routine in all cases. The question of whether this theoretical margin of safety is real and whether additional lives can be saved by the adoption of this procedure can be answered in the affirmative only when some series of long-term survivals are cited.

IN SUMMARY — Two controversial methods of extending the standard abdomino-perineal resection of Miles have been discussed, the first involving the resection of contiguous structures, the second involving the ligation of the inferior mesenteric artery at the aorta. Both of these procedures have been demonstrated technically feasible and their use seems justified with extensive lesions wherein this is the only hope of cure. The latter procedure has been advocated by some as routine; this principle, however, has not been firmly established as yet and awaits the confirmation of some significantly higher 5-year survival rates before it can be generally accepted.

BIBLIOGRAPHY

1. Ackerman, L. V., and del Regato, J. A., Cancer, 1954.
2. Ault, G. W., A. T. Castro and R. S. Smith: Clinical Study of Ligation of the Inferior Mesenteric Artery in Left Colon Resections, Surg., Gynec., & Obst., 94: 223, 1952.
3. Bacon, H. E., Cancer of the Rectum and Colon, A Critical Analysis with Recommendations to Extend the rates of Survival, Surg. 41: 387-400, March, 1957.
4. Baker, J. W., and Margetts, L. H., and Schutt, R. P.: The Distal and Proximal Margin of Resection of Carcinoma of the Pelvic Colon and Rectum, Ann. of Surg., 141: 693-707, May, 1955.
5. Bricker, E. M., and J. Modlin: Role of Pelvic Evisceration in Surgery. Surgery, 30: 76, 1951.
6. Brunschwig, A., Pelvic Extenteration for Carcinoma of the Lower Colon, Surgery, 40: 691 to 695, Oct. 1956.
7. Cattell, R. B., and Mace, Albert J.: Total Hysterectomy with Resection of Primary Carcinoma of the Bowel, American Journal of Surgery, 578-582, 1951.
8. Coller, F. A., Cancer of the Colon and Rectum, Monograph of American Cancer Society, 1956.
9. Dixon, C. F., and Benson, R. E.: Carcinoma of Sigmoid and Recto-Sigmoid Involving Urinary Bladder, Surgery, 18: 191-199, 1945.
10. Gilchrist, R. K., and David, V. C.; A Consideration of Pathological Factors Influencing 5-Year Survival and Radical Resection of the Large Bowel and Rectum for Carcinoma, Ann. of Surg., 126: 421-438, 1947.
11. Gilchrist, R. K., and V. C. David: Prognosis in Carcinoma of the Bowel, Surg., Gynec. and Obst., 86: 359-371, 1948.
12. Grinnell, R. S., and R. B. Hiatt: Ligation of Superior Mesenteric Artery at the Aorta in Resections for Carcinoma of the Sigmoid and Rectum. Surg., Gynec. and Obst., 94: 526, 1952.
13. Knight, C. D., Waugh, J. M., Dockerty, M. B.: Cancer of the Rectum in the Female, Surg., Gynec. and Obst., 95: 220, 1952.
14. Miles, E., A Method of Performing Abdomino-Perineal Excision for Carcinoma of the Rectum and of the Terminal Portion of the Pelvic Colon. The Lancet, 175: 1812, 1908.
15. Moseley, H. F.: Textbook of Surgery, 1955.
16. Rosi. P. A.: Selection of Operations for Carcinoma of the Colon, The Surgical Clinics of North America, 221-231, February, 1954.
17. State, D., Combined Abdomino-Perineal Excision of the Rectum — A Plan for Standardization of the Proximal Extent of Dissection, Surg. 30: 349-354, 1951.

"Does your wife support you?"
"No, but she holds me up every payday."

Support During Labor

MICHAEL NEWTON, M.D.
Jackson, Miss.

Eighty per cent or more of women have labors and deliveries which fall within the normal range. It is the support of these women that I want to discuss today. The methods and techniques I shall describe do indeed help in the management of problem cases, but here they must be combined with specific therapeutic measures. They are most applicable where no obstetrical difficulties arise.

Effective support can be given by the combined use of pharmacological, emotional and physical methods. Drugs alone, particularly if used in large amounts, carry certain dangers for both mother and baby. Emotional and physical support can reduce the need for heavy sedation. Conversely emotional and physical support do not usually relieve all the discomfort of labor and they are materially helped by the careful use of drugs.

During the last eighteen months at the University Hospital we have been particularly interested in emotional and physical methods of support. This should not be taken to imply that we feel drugs are not important. They certainly are. However, pharmacological methods have been extensively studied over the past five decades, whereas relatively little attention or critical evaluation has been given to emotional and physical methods.

First, to deal briefly with emotional support. The surroundings in which labor is experienced may greatly affect a woman's reaction to discomfort. In the past fifty years one of the greatest changes in obstetrics has been that from home to hospital deliveries. This change has been responsible, at least in part, for great reductions in maternal and fetal hazards, and one would certainly not want to put the clock back. However, there have been some disadvantages. The laboring woman is taken away from familiar home surroundings and placed in a hospital which is known as a place where sick people go. The hospital routines, strange personnel in the delivery suite and the lack of privacy all contribute to the apprehension of the young and inexperienced mother. However, a delivery suite can be a comfortable and friendly place. Simple changes in furniture, such as the addition of a comfortable chair, a small table, reading material and even curtains can materially increase the patient's comfort and lessen her apprehension.

An important corollary to pleasant surroundings is the attitude of the personnel who work in the delivery suite. When our medical students first start working on the Obstetrical Service, we give them a list of instructions to help them in the management of patients. These are widely applicable to everyone who looks after patients in labor; they include the following:

1. Be friendly and sympathetic from the first moment you enter the room.
2. Lose no opportunity of reassuring the patient that everything is going well and normally. Where possible tell the patient of progress, as evidenced by the results of examinations, but do not be over-optimistic.
3. Avoid suggesting discomfort or difficulty to the patient.
4. Always be quiet on the delivery suite and in the progress rooms. This is particularly important while your patient is having a contraction.
5. Where possible give the patient simple explanations for any procedures which have to be done.

The objective evaluation of specific techniques of physical support during labor has been one of the chief objects of our study at the University Hospital. At present we have extensive information, obtained from data sheets constructed for processing by IBM methods, on some 550 women who have delivered vaginally at our institution. The material I am presenting today represents some of the observations made on our first 220 patients.

In considering these methods, it is convenient to divide labor into three parts—early first stage, later first stage (transition stage) and second stage.

Early first stage of labor comprises the period of effacement of the cervix and dilatation up to about 6 cm. During this time the sole expulsive force consists of the uterine contractions.

Position need not be rigidly controlled during this part of labor. Many women find it more com-

---

*Presented before the Section on Obstetrics and Gynecology at the eighty-ninth annual session of the Mississippi State Medical Association, Jackson, Miss., May 14-16, 1957.

†From the Department of Obstetrics and Gynecology, University of Mississippi School of Medicine, Jackson, Miss.

fortable, particularly in the early hours, to be active, stopping only when a contraction occurs. They may prefer to sit in a chair and some may wish to lie down. Change of position or activity is often desirable.

Relaxation during contractions is important. Active bearing-down efforts will do nothing to help the expulsive action of the uterus. They may even cause the muscular fibers of the cervix to contract rather than relax and they will certainly tire the woman. Comfortable positions of relaxation during contractions can be achieved whatever the woman's activity between them. In all cases partial flexion of the joints and comfort are the important things.

Companionship and encouragement are especially helpful at this time. Such help can well be given, where possible, by the patient's husband.

Two specific physical techniques are of help. As the uterus contracts, the fundus tips forward. It thus impinges on the anterior abdominal wall and may in this way cause some discomfort. Diaphragmatic breathing and bulging the abdomen forward during contractions reduce the pressure of the anterior abdominal wall against the uterus. We have found that the use of this technique does indeed relieve discomfort. Eighty-five women were instructed in abdominal bulging during contractions. Sixty-seven (79%) of these women had relief of discomfort, whereas only eighteen (21%) had no relief. The proportion of women obtaining relief was only slightly greater in those who had received training in this technique during the antepartum period than in those who had not received such training. This indicates that abdominal bulging and diaphragmatic breathing can be effective even when taught for the first time during labor.

Back pain in the sacral area is often noticeable toward the end of this part of labor, and many continue into the transition stage. Firm pressure or rubbing can do much to relieve discomfort. In our study 77 women received this type of help. In sixty-four (83%) back ache was relieved: in thirteen (17%) it was not relieved.

The later part of the first stage of labor or transition stage is worth considering separately, since this is the time at which most women feel discomfort and at which constant attendance, encouragement and support are essential.

The transition stage lasts from about 6 cm. to full dilatation of the cervix. Clinically it is generally recognizable by the increased frequency and severity of contractions, by an increase in bloody show, by hiccups or even nausea and vomiting and occasionally by sensations of heat or cold.

As far as position in the transition phase is concerned, most women prefer to be in bed. Since this part of labor usually lasts only from 12 to 15 contractions, one position of comfort ordinarily suffices. This may be on the side with all joints comfortably flexed or on the back with the head of the bed raised and the knees spread and supported.

Relaxation is still important. Bearing-down efforts can still contribute nothing to the expulsive force of the uterus. Relaxation becomes more difficult as the end of the transition phase approaches. It is here that constant encouragement is necessary.

Abdominal breathing should still be used during this stage, but it is frequently difficult to achieve. In this case chest breathing with lateral expansion of the lower ribs is frequently helpful. This can easily be demonstrated by the assistant holding her hands on the patient's lower chest during inspiration and expiration.

Back pressure still will be helpful at this stage if the patient is lying on her side. Also, if the assistant's hands are placed on each side of the abdomen and lifted up during a contraction, some relief from discomfort may be obtained.

During the second stage of labor the voluntary muscles of expulsion contribute greatly to the force of the uterine contractions in pushing the baby down the birth canal. Therefore, somewhat different techniques are necessary at this time.

In this country the second stage of labor and delivery are usually conducted in the lithotomy position. This position provides adequate opportunities for administering general anesthesia, for insuring asepsis and for conducting operative deliveries. However, it is not the most efficient position for the use of the voluntary muscles of expulsion. Support for this belief lies in the fact that other physiological functions such as urination and defecation in which the same muscles are used are commonly performed in the sitting or squatting position. The difficulties of trying to have a bowel movement on a bed pan are quite familiar. Also, throughout the world over 50 per cent of women in primitive areas deliver their babies in some sort of sitting or squatting position. At the University Hospital we have been using a back rest fitted to the standard delivery table by which the patient's back can be raised to various levels during the second stage of labor. This, combined with a low position of the stirrups and flexon of the head by means of a pillow, enables more effective expulsive efforts to be made. We are satisfied that satisfactory asepsis can be maintained and that, if necessary, operative deliveries can be performed without difficulty in this position. Patients have generally been more comfortable. Also, they have been more able, if they so desired, to take an active part in the second stage of labor and to see their babies more easily after delivery.

In the second stage of labor, as in the first stage, constant encouragement and "coaching" are essential on the part of the obstetrician and his assistants. In this connection it should be remembered that the second stage of labor may conveniently be divided into a descent and a perineal phase. If a woman is encouraged to make strong expulsive efforts during the descent phase, she may become tired during the perineal phase. Therefore, in the first part of the second stage strong expulsive efforts should not be made.

Two types of breathing, different from those used in the first stage of labor, are necessary for the second stage. These consist of holding the breath to bear down and panting to slow the actual delivery of the head. It is helpful for a woman to learn these techniques during pregnancy and in addition it may be of value to her to learn the delivery position with the legs spread wide part.

Our preliminary data indicate that the methods I have described when combined with judicious use of drugs can be of great help to the 'normal' woman in labor, and may be used with advantage even when complications are present.

It is also important to remember that support during labor should be considered as part of obstetrical care as a whole. Regular antepartium care, as we know it ,helps greatly with the care of the patient in labor. However, in addition, education of the woman during pregnancy offers an additional contribution. Such education is based on the belief that knowledge of what to expect during labor and delivery and in the post partum period can do much to allay anxiety and make the whole obstetrical experience less disturbing and more comfortable. Our own limited experience in a group of service patients indicates the value of this approach. Significantly more women who had had antepartum instruction stated after delivery that their labors had been easy as compared with those who had had no instruction. This was inspite of the fact that there was no apparent difference in obstetrical difficulties between the two groups. In addition, our third year medical students who sit with the patients in labor have frequently commented that patients who have attended antepartum classes are more cooperative and better able to face labor and help themselves.

SUMMARY

1. Support may be given to the woman in labor by pharmacological, emotional and physical means.

2. A study of various physical methods of support has been conducted at the University Hospital.

3. Attention to details of position, relaxation and breathing in the various stages of labor may be of considerable help to obstetrical patients. Of particular value are abdominal bulging and back rubbing during the first stage of labor and the semi-sitting position in the second stage.

4. The techniques described are simple and can be used during labor even without previous instruction. They should be combined with judicious use of drugs and emotional support.

5. Support during labor should be considered as part of obstetrical care as a whole. It is more effective when preceded by education of the patient during the antepartum period.

DISCUSSION

Dr. W. F. Hand, (Jackson) — The art of obstetrics is getting the patient through her pregnancy with as little discomfort as possible while the science is directed toward the delivery of a normal living infant and resultant healthy mother. In our training the scientific has grossly overshadowed the art.

What Dr. Newton has presented here today is basically another form of suggestion therapy. The instructions in buldging are given with the positive suggestion that it will relieve the discomfort of labor. This gives the patient something to do during her contractions and also inhibits the contraction of the pelvic muscles.

Suggestion is of course a form of hypnosis and only varies in degree. I would like to read a quote from one of the pharmacutical papers. "Hypnosis has been compared to an enterprising prostitute who is persuaded from time to time, to abandon her sordid life and to saunter into the open boulevard of respectability, only to encounter repudiation." Today hypnosis is gaining again in respectability. I personally am enthusiastic about its potentialities but I read the glowing accounts of the lay press with spasm of all sphincters. Only about one fourth of all patients who are hypnotized can reach a surgical plane which is necessary for an absolutely painless delivery and where and episiotomy can be done. The others will get about the same relief as a heavily sedated patient. They will complain but only have a vague awareness of the discomfort. The amount of anesthetic agent required for delivery is materially reduced which of course is reflected in the baby. The post-partum discomfort from after pains and the episiotomy can be reduced or eliminated and a feeling of well-being produced.

One of the disadvantages is the time required. A trance can be induced in a susceptible individual in ten minutes or less. The repeat conditioning requires five minutes or less at subsequent visits. For the patients that will accept hypnosis it is the ideal obstetrical analgesia and far superior to the simple suggestion and conditioning regimes. It is something we should seriously consider in the practice of our art.

DR. J. COLLINS WILLIAMS, (Greenville) — Dr. Newton's paper is very timely particularly in his emphasis on emotional and physical methods that may be utilized in support during labor. My associate and I in our practice take full advantage also of the various drug combinations for pain relief, during the first stage of labor. In addition, we use saddle block anesthesia for delivery in the majority of cases.

We have found, as I am sure all of you have, that pain and discomfort during labor varies greatly with the individual patient. We have become increasingly aware of the emotional aspect of a given patient in her reaction to pain. By giving adequate time for ante-partum office visits, furnishing simple, but complete, pre-natal instructions, and endeavoring to answer questions concerning pregnancy, all help to make the on-coming labor less dreaded. We have noticed also, particularly among the young primiparas, their eagerness to know more about what pregnancy, labor, and delivery are all about. In the past few months several of these patients have requested to go to the hospital, and inspect facilities and to meet the nursing personnel. We are now in the process in Greenville in setting up regular scheduled tours of the maternity section, whereby these future patients may visit and inspect the facilities, and meet the nursing personnel on the floor. We have frequently noticed how much more at ease the patient is at the onset of labor, if she has been hospitalized during pregnancy for some minor complaint, and has become familiar with the maternity section, and the nursing personnel.

We believe we have a unique situation in Greenville, for a town of its size, relating to the emotional support during labor. The nursing personnel of the maternity section is divided into two groups: group 1: those who attend the post-partum patients, as usually found elsewhere; group 2: those who are qualified labor nurses, who alternate working one day out of three. These special nurses are with the patients from early first stage (or when they are admitted to the hospital) until they deliver and are back on the maternity floor. They remain with the patient for at least one hour post-partum. In addition to these nurses, we encourage the husband (or mother, or sister) to remain with the patient during labor. Our labor rooms are spacious enough for bed tables and comfortable chairs. They also have venetian blinds, pastel colors on the walls and ceilings, indirect lights, and have only one labor bed per room. Since this program was inaugurated several months ago, the patients' reactions have been very favorable, to the extent that patients coming into the office for their initial pre-natal visits have heard of this special nursing care from their friends who have recently delivered. It should be pointed out that these nurses, by experience, are truly qualified labor nurses. They can follow the patient's progress by rectal examination. They have borne children themselves, and are therefore sympathetic with the patients. Most important, they are able to notice any deviation from the normal labor pattern, and through their attitudes, by the time the patient has been admitted and settled down in the labor room, she has a great deal of confidence in this nurse who will be with her during the entire course of labor and delivery. We believe here that this special care of labor patients has, and will, add a great deal to emotional support of future labor patients.

Dr. Newton's specific physical methods of support during labor, and his study and observation of these methods at the University Hospital are both interesting and enlightening. Our use of drug combinations in the first stage of labor and the saddle block for the second stage and delivery, in the majority of patients, has left us without experience and observation, except in the early first stage. At the onset of labor our nurses by experience, and by instructions from the physicians, have finally overcome active bearing down during the first stage of labor, have encouraged patients to assume any position that is comfortable for her. By active attendance and encouragement, they can usually help a great deal towards teaching the patient relaxation during contractions in the early first stage. By the time the majority of our patients reach the transitional stage, the drug combinations usually have them fully relaxed, with minimal pain, or they are amnesic to the pain. We

(Concluded bottom page 117)

Apathy and Ignorance in Our Present Crises*

John E. Windham, M.D.
Ruleville, Miss.

Although no one has requested it, I feel that an explanation is in order as to why a paper of this sort is being presented at this scientific session. Let me say that the idea is entirely mine and that I alone am responsible. The apparent lack of interest by so many of our people in this crisis our nation faces has been appalling to me. The slanted newspaper and magazine articles, the radio and television programs are confusing and even hypnotic. Realizing this, I asked the program committee to allow me to substitute this paper for something medical with the hope of stirring up more interest among members of our profession.

Today we as a nation are apparently too interested in two tone hard tops to be obtained with nothing down and 36 months to pay. We are too interested in all-day television shows, and give-away programs in which nobody but the federal government gains anything. In fact, we are so interested that our own children have no idea of the history of this nation—the very essence of our foundation which has made us prosperous. Just check at home as I did and you will find your youngsters have no conception of Reconstruction following our Civil War. This was a period when Mississippi sent negro senators to Washington because we were forced to by bayonet. And again check and you will be appalled by the ignorance and apathy that exists among our grown people, people who should know better, but for one reason or another either do not or don't care.

We are predominantly Anglo-Saxon and inherit from our mother race qualities of tenacity and courage that are unmatched anywhere. For these reasons we are obligated to take up this battle that has all but completely divided our nation.

The past few years have produced more changes in our civilization than all of the centuries that have gone before. Our older people have seen the advent of the combustion engine making the automobile and airplane possible. They have seen World War I, a terrible depression, World War II, and the Korean war. They have witnessed the discovery of insulin, liver extract, sulfonamides, penicillin, the mycins and many other tremendous advances.

With these things has come a great unrest among the whole world population. England has fallen from leadership that lasted a thousand years to a second-rate power, and our own nation has been thrust into a leadership which she apparently never wanted and which her very youth has made it difficult for her to assume.

We have been uncertain and our steps have been faltering. As though this were not enough, internal forces have been at work which if left uncontrolled will accomplish something no outside force could ever do. Someone has said that the United States would never be destroyed from without, but if destroyed it would come from within.

It has been said that approximately 10 per cent of the people of the world make things happen, another 10 per cent watch these things happen, and the remaining 80 per cent have no conception of what is happening. Since our profession is considered one of the most highly educated it would seem that a tremendous responsibility falls on it to sift the truth from the false, and to see that people are held to the proper course.

Following the decision of the United States Supreme Court regarding segregation an unrest has been touched off such as none of us living today has ever witnessed. The South and particularly Mississippi has undergone persecution that no section of this nation has ever been subjected to in peace time. It is as if our whole communications system had suddenly directed all of its power in singling us out for subversion.

What is the sinister force back of this movement? What have we done or failed to do that would make us the object of this ridicule and insult? Are we not breeding the nearest kin to the pioneers of this nation to be found in any section? It is my belief that this holds the answer. If this is the answer who would want to destroy us?

To develop another angle, let us digress for a moment. Man's progress forward has always been due to his refusal to accept his present status. He is ever in quest of ways to make his life easier and more worth while. Ever has he continued to improve his standard of living. Thoroughly understanding this, some smart political leaders have been able to build strength through the simple process of promising and often giving a better standard of living, unearned, to the less fortunate.

---

*Presented at the semi-annual meeting of the Delta Medical Society, April, 1957, Ruleville, Miss.

We as a people can understand these two facts, but these are not sufficient to explain our situation today. There is another force that has stepped in quietly and taken advantage while we have been preoccupied. The nature of this force has been suspected but is only now beginning to be evident according to actual facts.

I quote from a column written by a staff writer of the *Jackson Daily News* and appearing in the issue dated March 8, 1957. At this time a hearing was taking place by a Louisiana legislative committee to determine what part the Communists might have in our present racial strife.

According to this article, testimony by Joseph Kornfedder, a former member high in the Communist party, asserts that, "the whole force of the Communist party is concentrated on the NAACP". Quoting further from the article on Kornfedder's testimony, "The original idea of racial agitation between white and negro in the United States originated with Stalin himself, who hatched the idea and sent a stooge to discuss the matter with Kornfedder in his Moscow apartment in 1928. Communists were taught through Kornfedder to use the American negro as the 'pestering center' of rebellion, discontent, and provocation. Moscow could never understand the South, which Russians said 'didn't operate according to the Marxist theory'. The South was a hard nut to crack, and was a non-conformist to northern United States Communist organizations. Racial incitation was the aim of the Communist wedge into NAACP and other negro groups. If a conflict didn't exist, one was created, Kornfedder said."

Many of our people are frustrated and many refuse to give any thought to the controversial. I heard one very intelligent doctor say that he was following the teachings of his own Protestant church to the effect that it is best to ignore the whole thing, just play like it is not so. If we all feel this way, and allow the apparent hatred of the Northern press for everything Southern, the maneuverings of unscrupulous political leaders, and the so-called bleeding hearts and do gooders, to continue unchallenged, the end of our troubles is not yet.

One issue of the Citizens' Council paper quoted from a work being completed at Johns Hopkins on the history of the Reconstruction period after the Civil War. It was stated by the author that Mississippi formed the resistance movement that finally enabled the occupied South to throw off the yoke of oppression. Today the first resistance movement in what he refers to as the second Reconstruction was begun again in Mississippi.

If this be the case, is there any wonder that we are so persecuted? I am amazed and very proud of our state for the brave front she has put up. Our people have held firm and have conducted themselves in a way our grandparents would be proud to see, but we have a long way to go. If we all can understand this, and unite as one, the fight can be waged with more success.

There is a lot that we can do to arouse our people. First, we can join our Citizens Councils if we have not already done so, and then read every copy of their official monthly paper and also the various pamphlets which are available from them at small cost. In addition, we can make it a point to keep as well informed as possible on current happenings by reading as many of our Southern papers and periodicals as possible. I think particular attention should be paid to letters written our Southern editors by people of other sections who believe as we do but apparently have no leadership and no voice.

Armed with these facts we can see that our families are taught and particularly the children in grammar and high school. Many of our patients with influence, but without knowledge of the situation or apathetic, can be told what is happening. A grass roots campaign of this sort can have tremendous force.

As I quoted above, Moscow believes the South must be cracked wide open if the United States is ever to be Communized. If we are overcome, all organized resistance in this nation is gone. The people in other sections believing as we do are powerless because of their press, radio and television, and their lack of leaders able to coordinate their efforts.

With the voiceless people of other sections looking to the South, and with the South looking to Mississippi for leadership it seems to me our profession has not only an opportunity but an obligation to go forth as disciples of human liberty. What greater service could we perform than that of assuring the type of freedom for our children that our grandparents died in order to give to us? May each one of us here so dedicate himself to this cause that he may feel proud when he hears the words of a recent out-of-state speaker when he said "Thank God for Mississippi".

INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW

JOSEPH P. MELVIN, Jr., M.D.	Cardiology
HARVEY F. GARRISON, Sr., M.D.	Pediatrics
JAMES D. HARDY, M.D., and STAFF, Department of Surgery, University Medical Center	Surgery

CARDIOLOGY

A Controlled Study of Three Methods of Prophylaxis Against Streptococcal Infection in a Population of Rheumatic Children — Harrison F. Wood, et al, Irvington House, Department of Pediatric Medicine, NYU College of Medicine.

It is well known that recurrences of rheumatic fever can be prevented in most patients by carefully maintained, continuous prophylaxis against streptococcal infection. Most of the studies of this sort have been done in adults, and the comparative values of anti-bacterial agents have been assaved in these groups.

However, during the period in which anti-streptococcal prophylaxis has been studied, only a few individual studies of pediatric groups have been reported. Some of these studies have used different anti-bacterial agents, but no clear-cut idea as to the superiority of one anti-bacterial agent over another has been arrived at. This paper compares the prophylactic regimens of sulfadiazine, 1 gm. a day by mouth in a single dose, penicillin 200,000 units a day by mouth in a single dose, half an hour before breakfast, and benzathine penicillin G (bicillin) 1,200,000 units in 2 c. c. by intramuscular injection every four weeks. At the first visit, all children received careful physical examination, chest x-rays and electrocardiograms. In addition, to assure freedom from streptococcal infection, each patient received an injection of 1,200,000 units of benzathine penicillin one month before the first clinic visit. No patients were admitted to the study until evidence that such infection was absent. After assignment to the particular anti-bacterial agent used, each child was seen in the clinic monthly. Physical examinations were done every month, and serial throat cultures, streptococcal antibody determinations and anti-streptolycin 0 titres were measured.

From the bio-statistical data gathered, it is evident that streptococcal infections occurred in about the same percentage of patients receiving the sulfadiazine prophylaxis as the oral penicillin prophylaxis. About 12½ per cent of the patients per year developed streptococcal infections in both groups while receiving these drugs by mouth. In the group of patients receiving bicillin monthly, there were no recurrences of rheumatic fever. This parallels closely early reports on the high efficiency of bicillin intramuscularly, and another point which emphasizes this is that only one patient in the group receiving bicillin even had a positive throat culture for Group A, Type 5, streptococci. Several patients in the sulfadiazine and oral penicillin groups carried this Group A streptococci for many successive months.

Recurrences of rheumatic fever were as follows: 4 occurrences in the group of sulfadiazine, 9 in the group receiving penicillin by mouth, and none in the group receiving bicillin monthly. Data obtained indicates that bicillin given intramuscularly every four weeks is more effective in preventing streptococcal infections and rheumatic recurrences than either oral penicillin or oral sulfadiazine. One probable reason is that bicillin is injected, thus giving assurance that the anti-bacterial agent is received. In addition, the superiority of bicillin may be due in part to the route of administration, and it should be noted that each monthly injection of bicillin provided what is usually an eradicating dose of penicillin for Group A streptococci, a property not present in the dose schedule used for the other two agents.

COMMENT: There is little argument in favor of oral anti-bacterial therapy for prevention of streptococcal infection in proved cases of rheumatic heart disease. It is more expensive, less well controlled, and possesses less eradicating, bactericidal action than one injection per month of bicillin. There are very few, if any, patients who cannot receive bicillin, and all of the studies tend to emphasize not only its superiority, but its overwhelming superiority over the other medications.

PEDIATRICS

Gastric Digestion of Homogenized Milk in School Children. E. Czech. Monatsschr. Kinderh. 105:88-90. (March) 1957 (In German) (Berlin).

Ten children who were between the ages of 8 and 14 years and without gastro-intestinal disturbances were given 300 cc. of homogenized cow's milk and in addition 7 per cent of a mixture of lactose and dextrose on an empty stomach on 2 consecutive mornings. Thirty minutes later, a stomach tube was inserted, 7 or 8 cc. of the gastric contents were aspirated, and quantitative determinations of the sugar content were made. This procedure was repeated at 30-minute intervals until the obtained gastric content was no longer sufficient for sugar determinations, i.e., less than 5 cc. On the next 2 days, the children were given 300 cc. of nonhomogenized cow's milk and in addition 7 per cent of a mixture of lactose and dextrose, and the same quantitative sugar determinations were made. The 10 mean sugar curves showed that homogenized milk remained in the stomach a shorter time than nonhomogenized milk. The difference varied from 30 to 150 minutes (averages, 80 minutes). In 9 of the 10 experiments, the sugar curve was higher after the ingestion of homogenized than after that of nonhomogenized milk. This suggested that the homogenized milk became less diluted by the gastric juice than the nonhomogenized milk. The homogenized milk thus requires less gastric juice for digestion than the nonhomogenized milk. Homogenization with its physical changes of softer coagulation of protein and disintegration of fat droplets makes the milk more susceptible to the action of the ferments, which explains the superiority of the homogenized milk as compared to the nonhomogenized milk.

COMMENT

There is no question about the value of homogenized milk particularly in infants and children over the age of five months on up and including, of course, adults. Younger infants have some difficulty in digesting it if begun too soon.

SURGERY

A Roentgen of the Evolution of Carcinoma of the Lung — by Leo G. Rigler, J. Thoracic Surg. 34: 283, 1957.

The natural history of evolution of carcinoma of the lung was studied by reexamining the previous serial x-rays of 100 patients who developed proved carcinoma of the lung. Over 50 per cent of the cases showed x-ray evidence of the pulmonary lesion more than two years prior to the appearance of symptoms or the determination of a diagnosis. Several cases were found which showed x-ray changes as long as six years prior to the recognition of the carcinoma. Likewise, it was observed that most carcinomas of the lung develop peripherally and then extend centrally into one of the large bronchi where they become symptomatic. The study demonstrated that carcinoma of the lung grows more slowly and over longer periods of time than has generally been appreciated.

Carcinoma-in-Situ and Early Invasive Carcinoma Occurring in the Tracheobronchial Trees in Cases of Bronchial Carcinoma — by Oscar Auerbach, J. Brewster Gere, Joseph M. Pawlowski, Gerald E. Muehsam, Harold J. Smolin, Arthur Purdy Stout, J. Thoracic Surg. 34: 298, 1957.

In a painstaking pathologic study, approximately 150 slides were made from the tracheobronchial tree of each of 54 patients who died of bronchogenic carcinoma. Of the 54 cases, 48 showed definite carcinoma-in-situ, usually in multiple sites in the same patient. Five cases showed definite invasive carcinoma apart from the clinically significant bronchogenic carcinoma. One further observation of interest was that carcinoma-in-situ was observed as frequently in the trachea as in the left main stem bronchus, although primary tracheal carcinoma is rarely seen clinically.

COMMENT

These papers indicate that we must revise our ideas both about the origin and the rapidity of growth of carcinoma of the lung. The roentgen study emphasizes that many carcinomas of the lung arise distally and are very slow-growing and could be totally removed by surgery if a more aggressive approach were made on asymptomatic lesions of the lung. The second study indicates that one of the reasons the salvage rate in carcinoma of the lung has been so unsatisfactory is that multiple carcinomas may arise in many patients. It would suggest that some method must be found for preventing the inhalation of carcinogenic agents, whether from cigarettes, road fumes or insect sprays. Removal of the carcinogenic agents from cigarettes would seem to be a much more practical approach than removing cigarettes from the general populace.

Watts R. Webb, M.D.

After all, the common cold is the most expensive illness we have in this country. A vaccine that will prevent it will be a great benefit to everybody. It seems that a young scientist at Johns Hopkins thinks he has a vaccine that will prevent the common cold. If he has, his monument of service will be mighty indeed. The bad cold causes so much loss of time it strains our financial fiber, in addition to weakening the human body in many ways. Let us hope we shall have an effective vaccine.

MISSISSIPPI ACADEMY OF GENERAL PRACTICE

OFFICERS ELECTED

Dr. A. T. Tatum of Petal was elected president-elect of the Mississippi Academy of General Practice at the annual assembly last month. Dr. John C. Longest of State College assumed the office of president, succeeding Dr. A. V. Beacham of Magnolia. Other officers elected were:

Vice-president: Louis F. Rittelmeyer—Jackson
Secretary-treasurer: R. J. Moorhead—Yazoo City

Directors:
District 1: Millard Jensen—Lucedale
District 3: Frank Massengill—Brookhaven
District 5: Guy T. Vise—Meridian
District 7: Oscar Ringold—Cleveland
District 9: John C. Powell—Senatobia
Delegate to AAGP: Wm. Lotterhos—Jackson
Alt. Delegate: A. V. Beacham—Magnolia

ANNUAL ASSEMBLY

Highlights of the meeting were the luncheon addresses by Major Frederick Sullens of Jackson and Dr. Jack DeTar, immediate past-president of AAGP, of Milan, Michigan. The banquet featured Jimmy Arrington, humorist and newspaperman from Collins, and awarding the Mead Johnson Scholarship to Dr. Joe Bethany, resident in general practice at the University Hospital in Jackson.

Registration totaled 208 physicians, highest in M.A.G.P. history despite rainy weather. Total registration exceeded 300, also a new high.

In every respect, the meeting was a success, and the vitality of the Academy was never more evident.

NEW MEMBERS

The Board of Directors approved nominations for membership on behalf of the following applicants: Howard Boone of Laurel; George Allard of Flora; and Julian James of McComb.

GP FOR STUDENTS

For the second consecutive year, the Mississippi Academy is paying one-half the subscription price to *GP* Magazine for senior medical students at the University of Mississippi.

Thirty-one students have availed themselves of this opportunity.

BOARD ACTION

At its first meeting, the new Board of Directors chose two members to fill the unexpired terms of R. J. Moorhead and Louis F. Rittelmeyer. Dr. Tom H. Mitchell of Vicksburg and J. Roy Bane of Jackson were selected.

Millard Jensen of Lucedale was picked to represent M.A.G.P. at the State Officers Conference in Kansas City.

A. V. Beacham, A. T. Tatum and Louis F. Rittelmeyer join President Longest and Secretary Moorhead on the executive committee.

APPRECIATION

The officers of the Academy wish to express their gratitude to everyone who helped make last month's Annual Assembly such a big success. The speakers, exhibitors, and local arrangement committees deserve special thanks. So do the newspapers, the Heidelberg Hotel, and all the members and guests who contributed by their presence and interest. Thanks! to all of you!

(Continued from page 112)

give the saddle block, usually when dilitation is between 8 centimeters to complete, if the presenting part is at least at plus 1 station. The relaxation of the perineum, together with the uterine contraction, usually put the presenting part on the perineum within 30 minutes. By this time, the patient is awake and alert, and can on command use abdominal muscles for further descent. This has been a very satisfactory method with us, and patients generally look to future pregnancy without apprehension.

I would like for myself and our labor nurses to study methods outlined by Dr. Newton, as relating to physical methods of support, to be used particularly in those cases where for one reason or another we do not use saddle block anesthesia.

President's Page

Physicians are literally trustees of the public health and as such, we need to remind ourselves periodically of dangers in health services in connection with our huge and continuing responsibility. Not the least consideration in this connection are threats to health under the guise of services and of all such dangers, the practice of cultism is not only the greatest but also the most reprehensible.

Mississippi boasts a long and proud record of having fostered and maintained the best possible laws relating to the practice of health services. We are one of four states in the nation which do not license chiropractors; the others are Louisiana, Massachusetts, and New York. Much credit in this connection goes to the distinguished executive officer of our State Board of Health, Dr. Felix J. Underwood, who has been a pioneer in fighting to keep a good medical practice act and to protect the people of Mississippi against the dangers of chiropractic. In recent years, our association has also emerged as a leader in the fight against the onslaught of cultist forces and there is every reason to believe that the fight is far from being won.

Physicians ask me, "How can we have chiropractors in Mississippi if there is no chiropractic licensure law?"

The answer to this is that you will find chiropractors and other brands of cultism wherever you find people; the problem is primarily one of restricting their activities. As long as there is no form of chiropractic licensure, there will be few chiropractors in Mississippi. At present, there are about 150 in the state as opposed to the hundreds and thousands found in other states. Quite naturally, the chiropractors want a licensing law. They also want the stamp of legality and sanction from the state—on their own terms if possible, but they'll accept any compromise as long as it represents a step forward to more extensive legislative demands at a future time.

It is important for every physician to understand that the dogma and cult of chiropractic are completely false from every standpoint of science and logic. These cultists contend that disease stems from "subluxations" or pinched nerves, mostly in the spinal column. Any first-year medical student can present overwhelming and conclusive scientific data to destroy this false and absurd proposition.

But even-thinking people have to be on guard to avoid the pitfall of swallowing the chiropractors' propaganda. They repeat over and over that their "profession" should be "regulated and policed" and that only "qualified and properly trained chiropractors" should be licensed. Hence, they approach the Legislature with ". . . An Act to License and Regulate the Practice of Chiropractic in Mississippi."

Licensure will not and could not make a bad thing good. It is to be remembered that any laws which would be passed would be administered by the chiropractors themselves. To avoid being deceived, we must understand the falseness and dangers of this cult, that a chiropractor pursuing the dogma of his cult can cure nothing, and that any law passed in this connection would be a bad law, operating to the detriment of all citizens of Mississippi.

There's a new twist in crusading for chiropractic licensure, particularly in the four states refusing the cultists sanction before the law. As long as Mississippi, Louisiana, Massachusetts, and New York resist efforts of these cultists to gain licensure, then they stand as a beacon of truth in the world of science. The chiropractors can ill afford this glaring light of discredit upon themselves for it is highly inconsistent with the propaganda they dish out. They have a new and "enlightened" approach to their problems. For one thing, they have copied the now-famous Public Affairs Pamphlet, "Science vs. Chiropractic," into one of support, a pamphlet deceptively similar — and completely phony — to the famous and widely known document.

We must discuss this among ourselves, at our hospital staff meetings and meetings of our component medical societies. We must carry our views to the leaders of the community, thinking citizens who help shape opinion in the making of laws. The future may hold another struggle like that of 1954 when the chiropractors fought for Senate Bill 1405, the almost-successful campaign to gain licensure.

The onerous and sometimes thankless task of fighting cultism is a responsibility of ethical physicians everywhere and MSMA will not fail the people of Mississippi in upholding this trust.

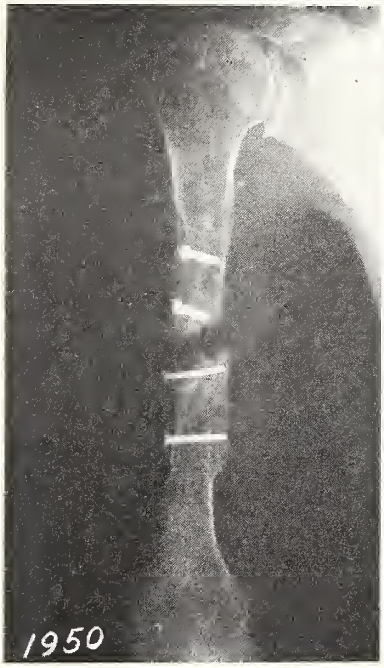
Howard A. Nelson, M.D.
President

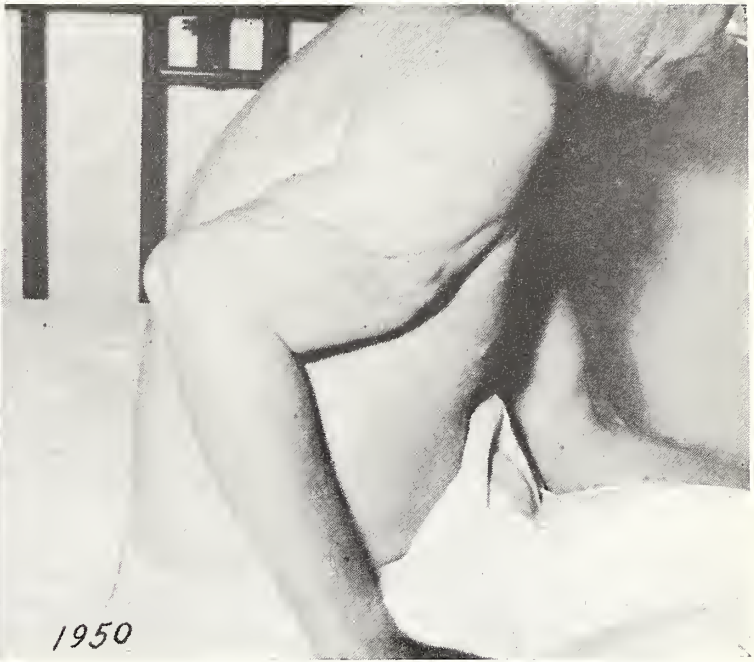
FRACTURE PROBLEMS

Leslie V. Rush, M.D.
Meridian, Miss.

No. 6 of a series

Non-Union Humerus Shaft 15 Years Duration: Ultimate Healing





Male age 37. Non-union shaft humerus eight years duration. Many previous operations in Army hospitals with prolonged immobilization by airplane splints and spica casts.

Fairly marked limitation motion of shoulder and elbow. Severe scarring in soft tissue which was adherent to humerus. Marked interval between bone ends and bone extremely osteoporotic.

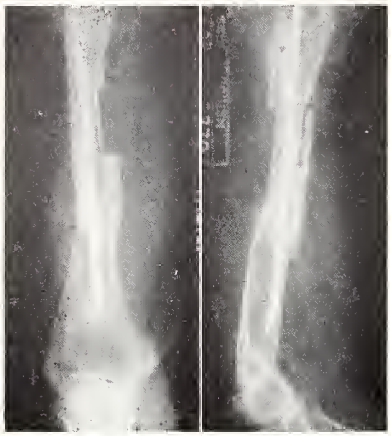
Prior treatment:

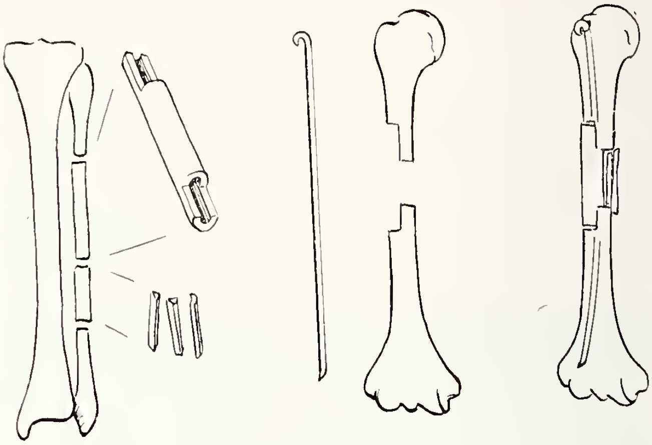
June 1942: Infected compound fracture humerus, violent soft tissue injury and radial nerve damage. Delayed skin graft.

May 1943: Step-cut operation with screw. Chip bone graft. Transplantation radial nerve. Recurrence of infection.

Sept. 1945: Dual bone graft from tibia.

Nov. 1946: Fracture of graft with non-union which was untreated 4 years.





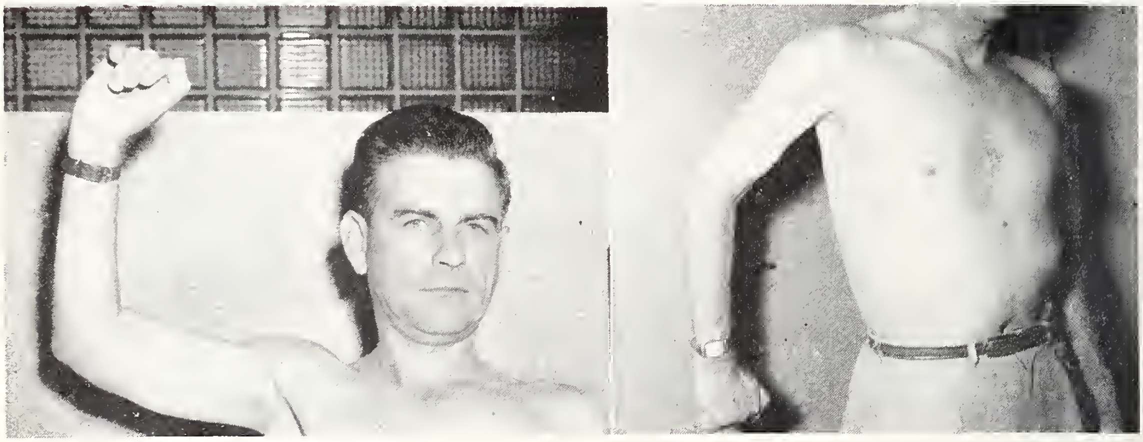
OPERATION JUNE 1950

Defect bridged by tube graft from fibula. Straight Rush pin 3/16 inch used axially to fix graft in position.

Curved pin might have been better, but could not be passed through fibula graft.

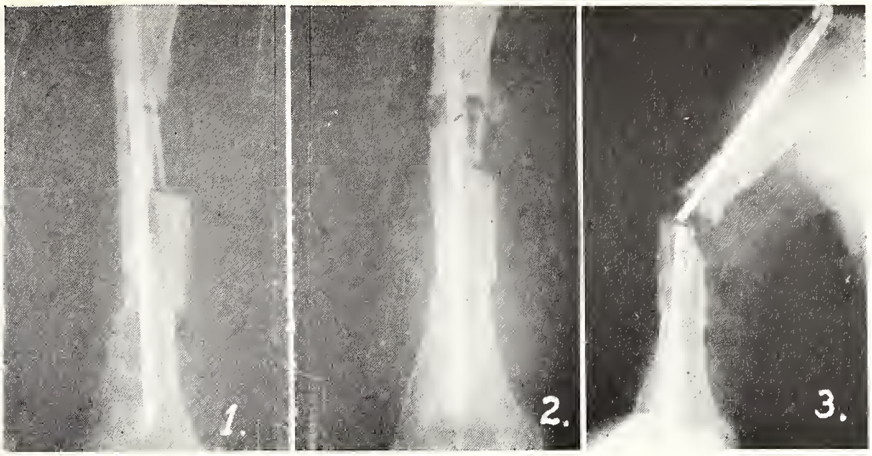
Excellent contact-compression secured with stable fixation. Step-cut key graft prevented rotation.

Immediate active motion permitted.



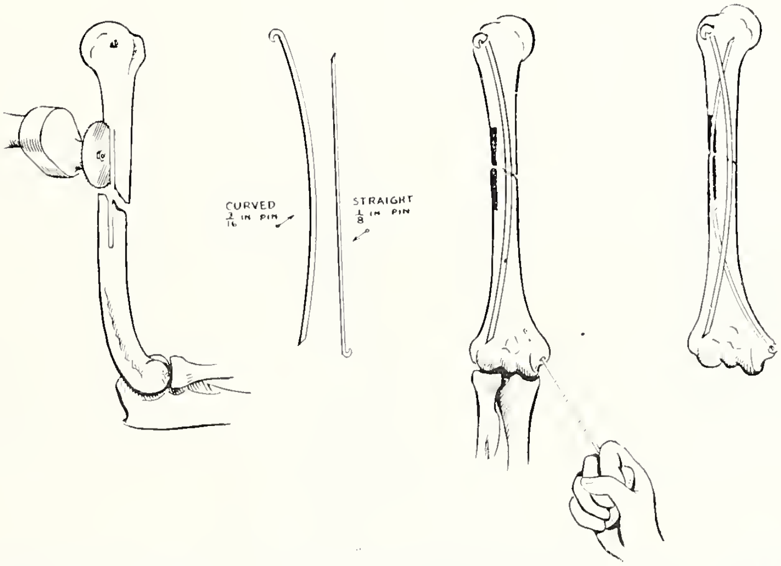
MOTION AT 97 DAYS

Patient had good function and good muscle tone. Fixation was still thoroughly stable. Roentgenograms showed ends of graft fusing with shaft fragments.



FOLLOW-UP

1. At 97 days rapid healing is evident at both ends of the graft.
2. At approximately 2 years, the mid-portion of graft has absorbed and the pin now shows motion in both fragments. Both rocking and rotation is occurring. New graft and new pin recommended but patient did not return for 8 months.
3. At approximately 3 years fracture of pin occurred. Note lateral angulation from pull of the deltoid muscle.



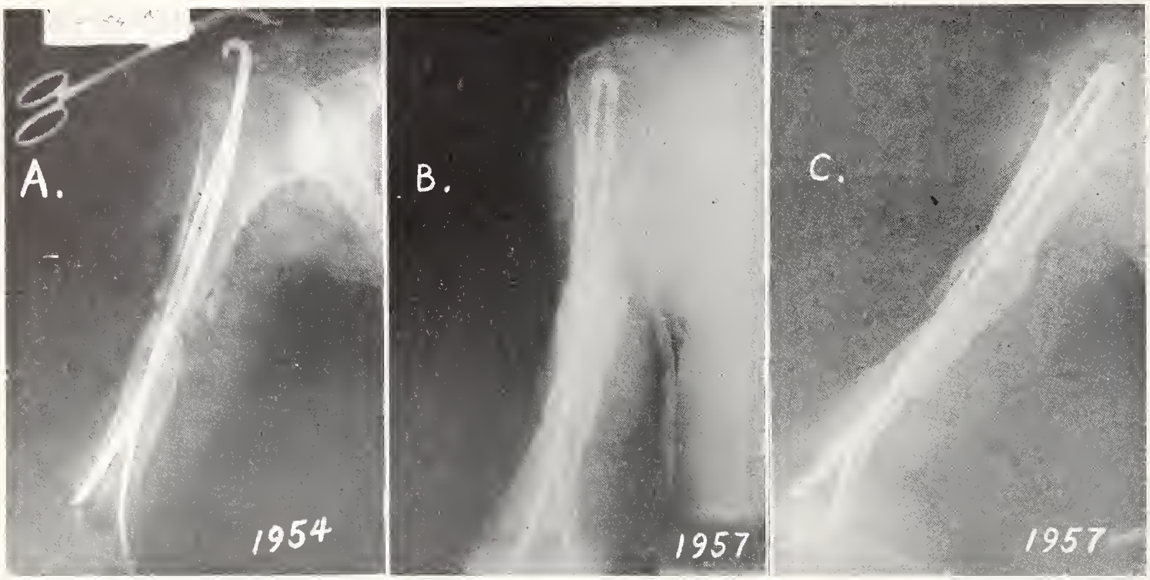
OPERATION 1954 — ILIAC GRAFT WITH DOUBLE PINS

The bone ends were freshened. A slot one-eighth inch wide was made in lateral wall of each fragment.

Original straight pin replaced by a curved pin 3/16 inch diameter entering greater tuberosity and driven well into external condyle.

Supplemental pin, 1/8 inch diameter, introduced through internal epicondyle and driven upward. The passage of the pin axially in the bone forced it into a curve, the convexity of which fitted into the slot as a further safeguard against rotation.

Chip and barrel stave iliac grafts applied.

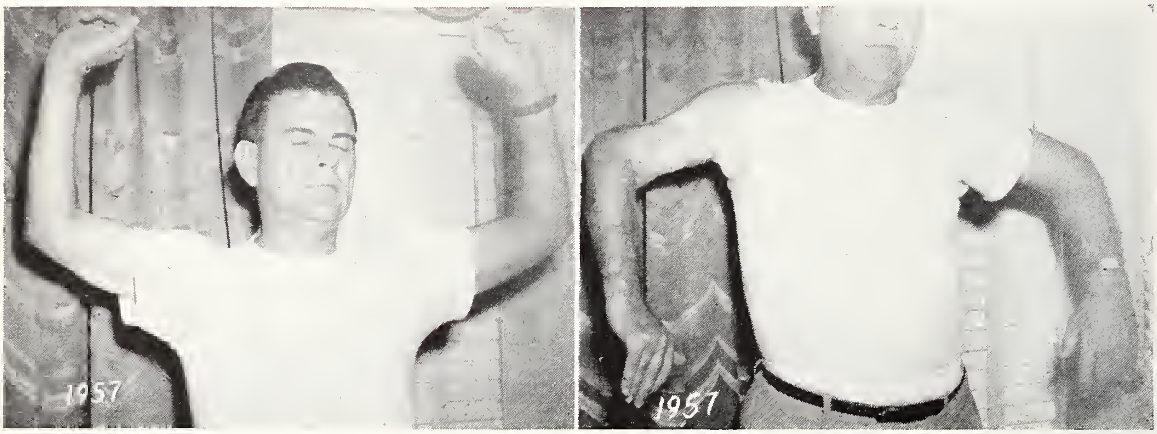


FOLLOW-UP LAST OPERATION

(A) Check-up films in surgery. Pins have not been driven completely home. Iliac grafts have not yet been applied.

(B and C) Three and a half years after last bone graft with double pinning. Healing appears secure but some cartilage islands are still present in new bone bridge. After this operation light hanging cast was worn for 14 months, being removed for several days at intervals for exercise of the contiguous joints.

BELOW: Showing ultimate result and motion 15 years after original injury.



Medical School Miscellany

SYMPOSIUM ON TRANQUILIZERS

When to prescribe a tranquilizing drug, which one, how much and what to expect are questions most physicians are asking today.

Mississippi doctors can get some of the answers at a Symposium on the Tranquilizing Drugs at the University Medical Center on Thursday, Nov. 6.

Three psychiatry professors from the University of Michigan School of Medicine will present the one-day program covering clinical uses of the tranquilizing drugs, their physiological properties and a report on experimental research.

Panelists will be Ralph Gerard, M.D., professor of neurophysiology at the University of Michigan, and chairman of the National Advisory Committee to the Psychopharmacology Service Center, USPHS; James G. Miller, M.D., professor of psychiatry and chief, Mental Health Research Institute, University of Michigan, and Raymond W. Waggoner, M.D., chairman of the department of psychiatry, University of Michigan.

Open without fee to all interested physicians, the Symposium will begin at 10:00 a.m. on Thursday, November 6, with Dr. Waggoner's discussion of clinical uses of tranquilizers. Dr. Gerard will follow with a report on physiological properties of the drugs.

After lunch in the Medical Center cafeteria, the Symposium will continue with Dr. Miller's paper on recent research findings and will conclude with an open discussion in which the three speakers will answer questions from the floor.

Dr. F. J. Moore, chairman of the psychiatry department at the Medical Center, has said that ample time will be allowed for participants to get answers to the questions surrounding these recently developed drugs.

"Physicians tell us that 30 to 60 per cent of the patients they see in their offices have primarily functional disorders," Dr. Moore adds "so they want to know more about 'tailoring' the new drugs to the individual patient's needs."

The Symposium is being presented by the University Medical Center Psychiatry Department and the Mental Health Committee of the Mississippi State Medical Association with the assistance of an educational grant from Wallace Laboratories.

Attendance is approved for four hours Category I credit on the postgraduate requirements of the Mississippi Academy of General Practice.

DIABETES LECTURE

'Recent Advances in Diabetes", is the subject to be discussed by an earlier guest lecture, sche- to be discussed by an earlier guest lecture, scheduled to speak at the Medical Center in late Octo-
John Eager Howard, M.D., associate professor of medicine and chief of the chemical (endocrine) division at Johns Hopkins School of Medicine, will talk on that topic at Medical Grand Rounds in Room 6-A on Thursday, October 26. All interested physicians are invited to attend. Dr. Howard will also participate in the Endocrine Conference. His lecture is one of a continuing series brought to the Medical Center by a graduate training grant in diabetes from the National Institute of Arthritis and Metabolic Diseases, USPHS.

PRE-MED DAY

The first Pre-Med Day at the University Medical Center is set for Thursday, Oct. 10.

Planned by the School of Medicine Admissions Committee and Pre-Med Advisors from junior and senior colleges, the event is aimed at stimulating interest in medicine among top undergraduate students.

Beginning with sophomores, pre-medical students from all junior and senior colleges in the state are to visit the Center, getting a comprehensive look at its activities.

It is anticipated that the event will be held annually in the future.

LIONS CLUB GIFT

Central Lions Club in Jackson has given the Medical Center a new audiometer for use in the Ear-Nose-Throat Clinic.

The audiometer will be used for patient care and for research on a new form of streptomycin which is believed to be nontoxic to the organs of hearing.

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $3.00.

Published monthly at 104 Hospitality Street, Booneville, Mississippi. Return postage guaranteed.

W. H. ANDERSON, M.D.	Editor-in-Chief
MILDRED P. ANDERSON	Assistant Editor

MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY

C. W. Patterson ,M.D. Rosedale, Miss.	President
J. Max Roy, M.D. Forrest City, Ark.	President-elect
C. L. Chumley, M.D. Nashville, Tenn.	Vice-President
Lon E. Reed, M.D. Hot Springs, Ark.	Vice-President
R. B. Cunningham, M.D. Booneville, Miss.	Vice-President
Thurman Crawford, M.D. Memphis, Tenn.	Secretary-Treasurer

Mid-South Associate Editors

H. King Wade, M.D.	Hot Springs, Ark.
R. L. Sanders, M.D.	Memphis, Tenn.
Frank M. Acree, M.D.	Greenville, Miss.

MISSISSIPPI STATE MEDICAL ASSOCIATION

Howard A. Nelson, M.D. President	Greenwood
Guy T. Vise, M.D. President-elect	Meridian
Geo. W. Twente, M.D. Secretary	Jackson
Rowland B. Kennedy Executive Secretary	Jackson

State Associate Editors

Louis F. Rittelmeyer, M.D.	Meridian, Miss.
John T. Bryan, M.D.	Meridian, Miss.

The Publication Committee is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.

Address all material for publication to W. H. Anderson, M.D., 104 Hospitality Street, Booneville, Mississippi.

A LIFE-LONG STUDY

The fall of the year means something special to millions of Americans—it is back to school for them. For physicians, it should serve as a reminder that we too need to go "back to school" from time to time.

The practice of medicine is a demanding occupation: hours are long and time for recreation, or even for quiet reflection, is scarce. Any activity that would presume to infringe on a physician's "free" time must, therefore, offer him something in return.

Has anyone the right to tell us that we should go back to school? Even after college, medical school, internship and residency? Isn't that plenty? Yes, it is—for the time being. But medical knowledge continually advances; and the physician whose knowledge merely stands still is losing ground every day.

Sir William Osler has said, "To master the art requires sustained effort, like the bird's flight which depends on the incessant action of the wings." There is no time for coasting in acquiring and maintaining proficiency in the art of medicine.

Opportunities for postgraduate study by physicians have increased tremendously in the past few years. Look at the record in Mississippi during 1957 alone: American Cancer Society seminars at eight cities in January; the Cardiovascular Seminar and Symposium on Diarrhea at the University Medical Center; the MSMA annual meeting and the Gulf Coast Clinical Society meeting in Biloxi; the Mississippi Academy of General Practice assembly last month in Jackson; and the programs of the committee on trauma of the American College of Surgeons. And don't forget the New Orleans and Mid-South postgraduate assemblies just outside the state's borders.

The University of Mississippi has announced that it is offering on-the-job clinical training for physicians who want concentrated, individualized refresher courses. Physicians are invited to participate as postgraduate students in the teaching and service programs of five departments in the University Medical Center—at no cost to the individual doctor.

In the words of Elbert Hubbard, "The recipe for perpetual ignorance is to be satisfied with your opinions and content with your knowledge." Conversely, the recipe for wisdom is the never-ending search for more knowledge. This requires the humility to admit our shortcomings and the initiative to take advantage of the opportunities offered. "Back to school" means sacrifices in time and energy to physicians; it means better medical care for their patients. It is surely time and energy well spent. L. F. R.

COMMISSION EXECUTIVE RECOGNIZED

On September 29 Foster L. Fowler, executive secretary of the Mississippi Commission on Hospital Care, read a paper before the American Association for Hospital Planning in Atlantic City. His discussion was on the provisions of the Hill-Burton Bill. He mentioned strong and weak points in the bill, and in the main counted it very good. He does not think that radical changes need to be made. Mr. Fowler knows the provisions of the bill well and he is able and fair in his administration of same. The Mississippi Commission is most fortunate in having a man of the stature of Mr. Fowler to guide it in its deliberations and conclusions. There is no end to the good the Hill-Burton Bill has been to our state. The need for the continuance of this aid for hospitals and medical facilities is still urgent with the growing trend for hospitalization in the nation. The hospital is serving well our health economy.

When president of the State Medical Association in 1941 we felt highly honored to have Dr. Rudolph Matas, Dr. W. A. Evans and Dr. Seale Harris all on the program. All three have now passed on.

NORTHEAST STREAMLINING SUCCESSFUL

The Northeast Mississippi Medical members in an effort to secure a better attendance agreed to hold the quarterly sessions at the Tupelo Hotel, meeting for dinner before the scientific session, each doctor paying for his plate. Two meetings have now been held, June and September, both well attended. It is a growing problem now to get doctors to attend the district scientific sessions. Many of the older doctors lose interest for one reason or other; the younger ones seem to think they know enough already and count attendance at these meetings a waste of time. It is better for all concerned, including the patient at home, for doctors to attend their local, district, and state meetings. It all sums up to better medicine for the people.

RESULT OF RESEARCH

"Poisoning by the Organic Phosphorus Insecticides," by James C. Rice, Ph.D., published in the September issue, has created a wide interest. We regret that this fine paper could not be published earlier in the summer. We will see more and more what great services our medical center can and will render. Research is the soul of medical progress. It is wonderful to have it going on in our fine four-year medical school in Jackson. The influence of this school is being felt in Mississippi and it will reach throughout the nation as times goes on.

THE INTERNATIONAL COLLEGE OF SURGEONS MEETING IN CHICAGO

The second week in September a meeting of surgeons of the Canadian and American Sections of the International College of Surgeons was held as the official biennial meeting.

Some 985 surgeons were accepted into full fellowship. This raises the ICS membership past the 12,000 mark. It's only 21 years old.

Though this is a North American meeting, every continent was represented. More than 500 surgeons came from abroad. Some 200 papers were read.

Speakers came from 12 nations. Their papers were in seven languages. They were translated as at a United Nations meeting.

Many surgeons speak German, French, Spanish, Italian. For those who do not, simultaneous translation was provided by earphones.

New Developments

This meeting opened Sunday, September 8. Its importance, according to visiting surgeons, lay in the wealth of new developments of which they learned.

Great vistas have been opened for all of us in such fields as brain surgery, abdominal surgery, anesthesia.

The most important papers read dealt with:

1—Brain surgery. An aftermath used to be damaging to the psyche because physical beauty was marred, now the patient's head doesn't have to be shaved.

2—Heart surgery. A dog's heart has been transplanted into another animal where it lived two hours. This may later save human life.

3—Abdominal surgery. The entire stomach has been removed, with the patient living a comparatively normal life afterward.

4—Anesthesia. A new technique induces natural sleep. Muscular and nervous reactions continue. A sleeping patient, touched on the arm, moves it.

There's a tremendous development in heart surgery. It used to be that if we shut off blood circulation to the brain for four minutes, the patient became a mental case afterwards. Now we can work for 15 minutes without fear.

This additional time is given the surgeon by a new cooling technique.

The ICS, as the surgeons call their group, was formed in 1936 at Geneva by Dr. Max Thorek of Chicago. Its members are now in 42 countries.

This meeting was not an international convention. That big meeting will be held next year. It alternates with these North American meetings.

The group is conservative in outlook. Surgeons come in as associates, later win approval of an examining board to become fellows.

There is a 140-member board of governors and an executive committee. All officers (Dr. Thorek is secretary-general) serve without salary.

The president of the United States section, Dr. Curtice Rosser of Dallas, Texas, said, "It's a postgraduate course, given for a registration fee of $5. Most of these papers are printed, can be studied at home at leisure."

The papers are printed in the group's monthly journal. Most are summarized in French, German, Spanish, Italian. Those interested can translate them.

The meeting for most surgeons is selfless. They come at their own expense from the ends of the earth just to exchange ideas on surgery.

An official of the group, calling it an amazing demonstration, said:

"Not all surgeons have an American standard of fees. Some scraped the bottom of the barrel to get here. They want to keep up with things."

Most convention costs were borne by 107 exhibitors, renting booths to display everything from surgeon's scalpels to hospital operating rooms.

There are some 53 Fellows and Associates from Mississippi at the present time and since the applicant under 40 years of age must meet the requirements of the American Boards, of the 985 inducted at this meeting 85 per cent were in this category and all surgeons inducted belonged to at least one other surgical organization.

L. W. Long, M.D.

DEATHS

DR. MATAS

On Monday night at 9:38 P.M., September 30, 1957, Dr. Rudolph Matas passed to his reward. He was 97 years of age. He was often referred to as dean of the surgical world. A native of Louisiana he served as professor of surgery at Tulane for many years. One of the most versatile men who ever graced the medical profession, Dr. Charlie Mayo once remarked that he had more ready information at the end of his tongue than any man living at that time. He spoke fluently several languages. He was a pioneer in vascular surgery and laid the foundation for the marvelous progress now being made in the field. Versatile in the field of literature, an able historian, he was also active as a citizen and took a strong stand when important principles were at state, whether in state or national politics or in organized medicine.

In 1915 Dr. Matas delivered his masteful address, "The Soul of the Surgeon," at Hattiesburg before the Mississippi State Medical Association. In thought and in eloquence this oration has not been surpassed. This address was put in booklet form, and two printings were soon exhausted. A third printing was recently made.

As an honorary member of the Fifty-Year Club in Mississippi, he addressed this club at the state medical meeting in Biloxi not many years ago. At this meeting he urged doctors to keep their main interest in medicine to the last.

As we have known medical men in our part of the South, three stand out above the rest—Dr. Rudolph Matas, Gus Evans, and Seale Harris—Matas in the field of surgery, Evans in public health and pathology and Harris in internal medicine. They were fond of one other and devoted to world service in medicine. The vision and service in medicine of these three men was felt around the globe.

From Paul Flowers in *The Commercial Appeal* we quote:

As long ago as 1888 he had devised a surgical operation to relieve formidable disorders of blood vessels; by 1935 he had performed 606 of these operations, more than any other surgeon within that period, and the records showed that success had followed in 94 per cent of those cases.

When he arose at Hattiesburg he spoke from the depths of his own heart about his profession, surgery. In part, he said:

"It is indeed an impassioned and troubled life that is ours. One in which we can scarcely claim a single moment of mental ease and quiet. It has its great joys, its superb and glorious hours; but it also has its tragic hours, its hours of bitterness and desolation. And yet, the real and honest surgeons all love it. They love it, in spite of its fatigues, its worries and its emotions."

Then, quoting Jean Marie Faure, another great surgeon, Dr. Matas repeated:

and honest surgeon, no one can lie down to sleep
and honest surgeon, no one can lie down to sleep
the slumber of eternal night with greater composure and peace.

"Happy is he who, listening to the voice of his conscience, shall hear her murmuring in his ear the comforting words which tell him that, whatever his failings and shortcomings, he has done more good than evil; that on this earth, where joy and misery travel side by side, his hands, though bloodstained, not unlike those of the Savior, have relieved more suffering than they have caused pain."

With that creed in his 97-year-old heart, Dr. Rudolph Matas died at New Orleans Monday night. The event is noted in Paris and Barcelona, where he studied; at the National University of Guatemala, which conferred upon him the highest honor it could give; and the world of surgery pauses in tribute to his pioneering spirit and his great heart.

It has been a decade since Dr. W. H. Anderson, the Booneville, Miss., country doctor, gave me an inscribed copy of Dr. Matas' "The Soul Of The Surgeon." Those are immortal words.

DR. N. C. WALDREP

Services were held August 19 from Tishomingo Baptist Church for Dr. N. C. Waldrep, 80, who had practiced medicine in Tishomingo County for 56 years.

Dr. Waldrep, who died after a short illness, was a 32nd Degree Scottish Rite Mason.

Burial was to be in Tishomingo city cemetery.

Dr. Waldrep was a graduate of the Kentucky School of Medicine, Louisville, Ky., class of 1901. He was a member of the MSMA Fifty-Year Club.

DR. MAGRUDER

Dr. Levin Wales Magruder, prominent physician and a pioneer in the fields of roentgenology and radiology, died at Long Beach.

A native of Woodville, Dr. Magruder was 84. Since his retirement in 1954 he had resided in Waveland, Miss.

For many years he practiced general medicine and in 1919 moved to New Orleans, where he pioneered in roentgenology and radiology. From 1927 until his retirement he served as chief of radiology at Southern Baptist Hospital in New Orleans.

He is survived by one son, A. H. Magruder of Starhill, La., three daughters, Mrs. Edwin A. Socola of New Orleans and Waveland, Miss., Mrs. Nathan G. Gaston of Woodville, and Mrs. Tucker E. Dawson of Houston, Tex.; one sister, Mrs. M. P. Scott of Woodville; and one brother, Judge J. Douglas Magruder of Lecompt, La.

Surgical Injuries of the Ureter and Bladder*

IMMEDIATE AND DEFINITIVE MANAGEMENT

William E. Forsythe, M.D., F.A.C.S. †
Cleveland, Ohio

URINARY TRACT injuries have been among the earliest complications of pelvic surgery. Historically, the first recorded nephrectomy was performed by Simon in 1869 for uretero-abdominal fistula. Tuffier in 1865 reported forty cases of fistula following vaginal hysterectomy, and it is reported that Doctor Sims' interest in the problem of fistulas was, in part, responsible for the founding of Women's Hospital in New York City. Past and current literature is replete with articles about these distressing problems.

INCIDENCE

It is very difficult to review charts and determine the incidence of surgical complications, and although several authors have compiled excellent studies, one wonders at the accuracy of these works. In our study, on several occasions we have not found complications listed in the hospital statistics, although we personally have aided in the management of the complications.

The incidence of ureteral injuries (recognized) is reported as 0.4 per cent by Weir[20,21]; 0.93 per cent by Graham and Goligher[11]; and 0.83 per cent by Benson and Henn[4].

When careful postoperative studies are performed, the incidence is higher, being reported as 2.42 per cent by St. Martin et al (1a), and as high as 3 per cent by others. In radical surgery, the rate may be as high as 14 to 30 per cent.

Patients with vesico-vaginal fistulas are prone to carry their problems to new surgeons so it is difficult to determine the incidence of the dreaded complication. Meigs' Clinic reported a 9 per cent fistula incidence.

CASES STUDIED

This study comprises 86 cases, which have been obtained from the 1947-1956 records of University Hospitals, Lutheran Hospital and Euclid-Glenville Hospital in Cleveland, Ohio. Distribution of injuries and management was as follows:

URETERAL INJURIES (35)

Procedures:

- a. Ligation — 12
  - Deligation (p.o. 7) — 1 case — complete recovery
  - Primary drainage (U-2; P-1; N-3) — 6 cases
  - Recovery — 1 case
  - Delayed uretero-neo-cystostomy — 2 cases
  - Nephrectomy — 3 cases
  - Primary uretero-neo-cystostomy — 3 cases
  - No treatment — 1 case
  - Died (hemorrhage) — 1 case
- b. Section — 11
  - Primary anastomosis — 7 cases
  - Primary uretero-neo-cystostomy — 1 case
  - Nephrectomy — 3 cases
- c. Fistula — 12
  - Ureteral catheterization — 3 cases
  - Uretero-neo-cystostomy — 1 case
  - Uretero-sigmoidostomy — 1 case
  - Ligation of ureter — 1 case
  - Nephrectomy — 4 cases
  - No treatment — 2 cases

End Results

	Ligation	Section	Fistula	
Good .	6	4	4	40%
Fair	1	2		9%
Poor	1*	1	2	11%
Nephrectomy	3	4	4	31%
No treatment	*		1	
Died	1		1	6%

BLADDER INJURIES (51)

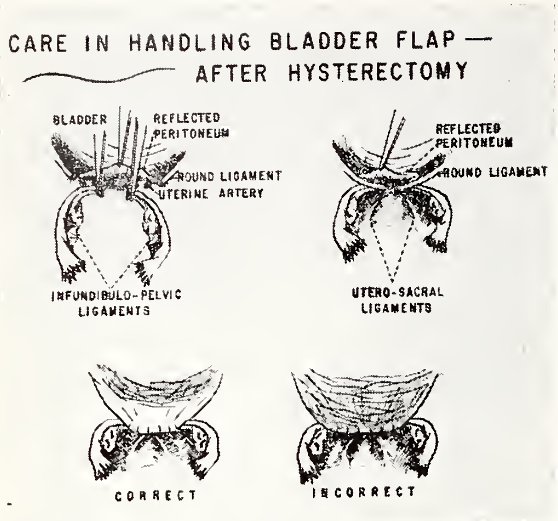
- a. Laceration — 21
  - Repair and drainage — 19 cases
  - Recovery — 17 cases
  - Fistulas — 2 cases
  - Cystostomy — 1 case (carcinoma — died)
  - Non-recognition — 1 case (died)

b. Fistulas — 30	Success	Failure (16.6%)
Foley drainage — 1 case	1	
Cystoscopy and fulguration — 5 cases	5	
Transvaginal — 12 cases	9	3
Transvesical — 9 cases	8	2
Combined — 2 cases	2	
Uretero-sigmoidostomy and Later ileal pouch — 1 case		1

---

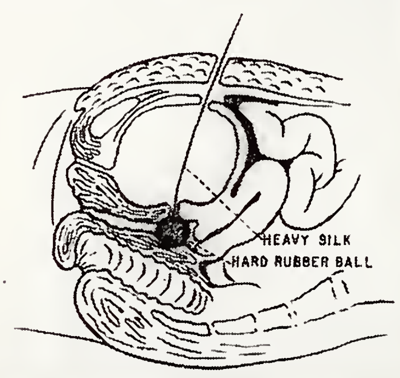
†From the Department of Surgery, Urological Service of Western Reserve University and the University Hospitals; and the Departments of Surgery, Urological Service of Euclid-Glenville and Lutheran Hospitals, Cleveland, Ohio.

*Presented before the eighty-ninth annual session of the Mississippi State Medical Association, Jackson, Miss., May 14-16, 1957.



CARE IN HANDLING BLADDER FLAP — AFTER HYSTERECTOMY

REPAIR VESICO VAGINAL FISTULA



CAUSES

The causes of these complications are in general the same as for most of our surgical difficulties.

1. Complicated surgery
2. Faulty technique
3. Poor exposure
4. Unrecognized anomalies

The sites of ureteral injury as listed by Novak are:

1. Where the ureter crosses the iliac vessels
2. In the ovarian fossae
3. In the intraligamentous portion
4. Where the ureter is crossed by the uterine artery
5. The intravesical ureter

Bladder injuries following hysterectomy tend to be back in the fundus, usually near the midline. Obstetrical fistulas more often involve the trigone and approach the bladder neck and urethra and present more difficult management problems. The bladder injury is usually due to:

1. Operative laceration or tearing of the bladder
2. Extensive dissection with decreased blood supply and subsequent necrosis
3. Misplaced ligature, suture or clamp, with resultant ischemia and necrosis

In our series there have been no complications following vaginal repair, even though on occasions the bladder was lacerated. The injury was recognized and repair prompt. We believe that most of the resultant vesico-vaginal fistulas have followed the third cause.

PROPHYLAXIS

From an extensive review of the literature, a careful study of the above cases, and a moderate personal experience, I think that certain principles may be established in the management of these problems. Certainly, all will agree that prevention is cardinal.

The value of excretory urography as a preliminary study in major pelvic and vaginal surgery has been repeatedly stressed, yet often neglected. The preoperative knowledge of a laterally displaced ureter; or a reduplicated ureter; or other congenital variations, may spare the patient additional hospitalization and surgery, and the surgeon chagrin and discomfiture.

For years, urologists have been recommending the preoperative introduction of ureteral catheters as a simple and safe preventive measure. We likewise stress the value of this procedure, and will insert the catheters at no expense to the patient, yet only rarely are we asked for this help. Burch[5] advises the routine palpation of the ureters before clamping and ligating the uterine arteries. We are all aware how difficult this may be, yet it certainly may be simplified with the presence of indwelling ureteral catheters.

Other helpful measures include the careful, complete mobilization of the bladder from the cervix before total hysterectomy; turning the peritoneum out before ligating the uterine vessels; and careful placement of the sutures closing and covering the vaginal vault.

One of my colleagues had the misfortune to have several patients develop vesico-vaginal fistulas within a very short period of time. A review of his technique revealed that sutures had been placed so as to compromise the bladder over the vault. This was readily corrected with no further difficulty.

URETHERAL INJURY—IMMEDIATE MANAGEMENT

The incidence of ureteral injuries in the experience of any surgeon is usually quite limited, so recourse to the literature and a review of hospital series is necessary in the development of the best methods of treatment. When possible, the immediate correction of these injuries must be strongly stressed.

Ligation or Crushing

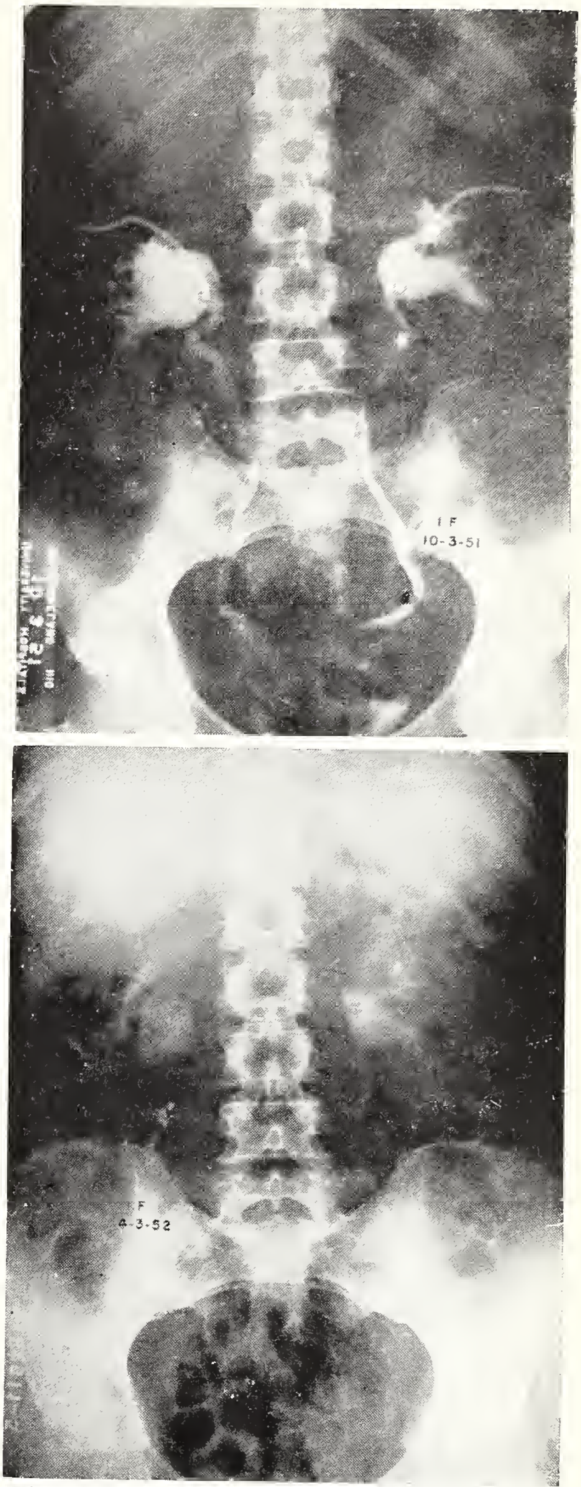
With the abdomen open, recognition of a ligated ureter obviously calls for the immediate removal of the tie. Ureterostomy catheter drainage or cystoscopy with ureteral catheterization, will usually result in uncomplicated healing. We also prefer extraperitoneal drainage for most cases. Check-up urograms are routine before hospital discharge.

When the ureter has been crushed, treatment is similar; however, if there is any question about the viability of the ureter, segmental resection or uretero-neo-cystostomy may be advisable.

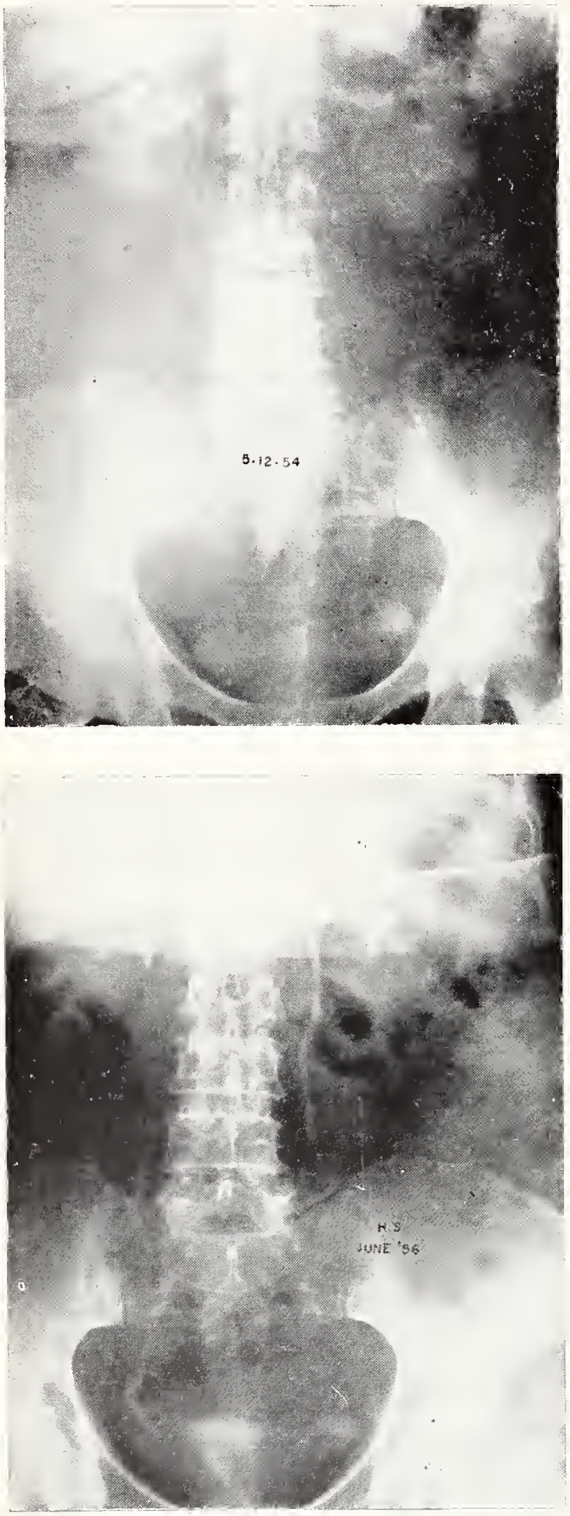
When a postoperative patient complains of flank pain; has a low-grade temperature elevation; unexplainable abdominal distension, excretory urography may reveal ureteral obstruction with hydronephrosis or non-visualization. Immediate cystoscopy and attempted ureteral catheterization is then indicated. If the obstruction can be passed, the catheter, regardless of size, should be fastened in position for drainage. Periodically the ureter should be dilated. A successful outcome will usually follow this procedure.

When the obstruction can not be passed, drainage is imperative. For this we prefer nephrostomy drainage. This procedure is relatively simple, nontraumatic, and does not disturb the ureter, hence making definitive surgery technically more simple. Twice we have employed ureterostomy drainage and later found the definitive ureteral surgery to be technically impossible and were forced to perform nephrectomy.

Anuria is a dreaded postoperative complication, and when it is noted, it is imperative that action be prompt. Although rarely successful, cystoscopy and ureteral catheterization must be attempted. The obstruction not having been passed, the question of deligation is always considered. We feel very strongly, as do most of our fellow urologists, that this procedure should not be attempted. Even with the urologist-surgeon team and using a catheter or diverticulite, location of the ureters and ligature may be difficult, if not impossible; and with the patient usually in poor condition, the procedure may carry too great a risk. Bilateral nephrostomy may be performed rapidly, successfully and safely, and in our opinion is the procedure of choice. Deligation or other definitive treatment may be later performed.



Case I.F: Following a vaginal hysterectomy and bilateral salpingo-oophorectomy for carcinoma of the cervix and prolapse, anuria was noted. Cystoscopy was performed, but neither ureter could be catheterized. Bilateral nephrostomies were immediately performed. At a later date, bilateral uretero-neo-cystostomies were carried out. Recovery was good.



Case H.S: The right ureter was transected during surgery for a papillary cystadenocarcinoma of the right ovary. Immediate repair was made over an F6 ureteral catheter with three chromic 6-0 sutures. Immediate postoperative urograms showed slight dilatation, but subsequent studies were normal.

Partial Section

In some cases of partial transection, ureteral catheterization alone may be adequate for healing. Other cases may heal faster if in addition to the catheter drainage, the defect is loosely approximated with several carefully placed, fine, atraumatic catgut sutures. In either case, extraperitoneal drainage is essential.

Complete Section

The completely transected ureter presents much more of a technical problem. When identity of the ends is possible, we prefer simple closure around an F6 or 7 catheter. In a non-dilated ureter, the use of a larger splinting catheter may increase the possibility of stricture formation. There are advantages to beveling the ends of the ureter, but more important features are the use of a few, well placed, atraumatic sutures with avoidance of tension.

Occasionally the distal segment of the ureter may not be readily located. If a cystoscopist is available, time may be saved by the insertion of a ureteral catheter or the diverticulite. However, if the patient's condition does not warrant prolonged search, a catheter ureterostomy may be life-saving.

When the distal segment has been sacrificed, direct bladder anastomosis or recourse to a bladder flap may be necessary. These procedures will be discussed later.

Although we have used the method in one case we wish to condemn strongly the practice of intentional ureteral ligation and kidney sacrifice.

Fistula

Usually the appearance of this complication is not noted for at least several days, and in several of the cases studied, the leakage was considered as a vesico-vaginal fistula and not correctly diagnosed until late. In three of our cases, ureteral catheter drainage was followed by complete healing. This procedure is all that is advised for the early treatment of this problem.

At this point I wish to stress the importance of complete urological investigation of all fistula cases. Even though excretory urograms may be reported as "normal", it is imperative that all cases be studied with cystoscopy and retrograde pyelography. A brief summary of a case with vaginal leakage following hysterectomy points out the importance of this study.

Case F.G: May 1946, hysterectomy for fibroids;
Closure No. 1
Closure No. 2
Closure No. 3

March 1947, the patient was transferred to University Hospitals:
Intravenous pyelograms "normal"
Cystostomy (?) — no fistula seen
Cystoscopy with pyelography—diagnosis made
Cystoscopy and ureteral catheterization
Cystoscopy and fulguration
Nephrectomy—cure

URETERAL INJURY—DEFINITIVE MANAGEMENT

The late treatment of the injured ureter, irrespective of the type of the injury, will usually fall within two categories; those where the proximal ureter may be anastomosed directly to the bladder, and a relatively few cases in which the ureteral defect will be so great as to make such a procedure technically impossible.

For the former there are two relatively simple methods of uretero-neo-cystostomy: *1)* a simple pull-through on a catheter and 2) a direct flap anastomosis. We prefer a combination or modification of the two.

1. Incision is made into the vesical fundus and the ureteral orifices are visualized.

2. A stab incision is made in a suitable position so there will be no tension of the shortened ureter. An F7 or 8 ureteral or soft rubber catheter is passed through this incision and up the ureter to the renal pelvis. The distal end of the catheter may be passed through the urethra for drainage.

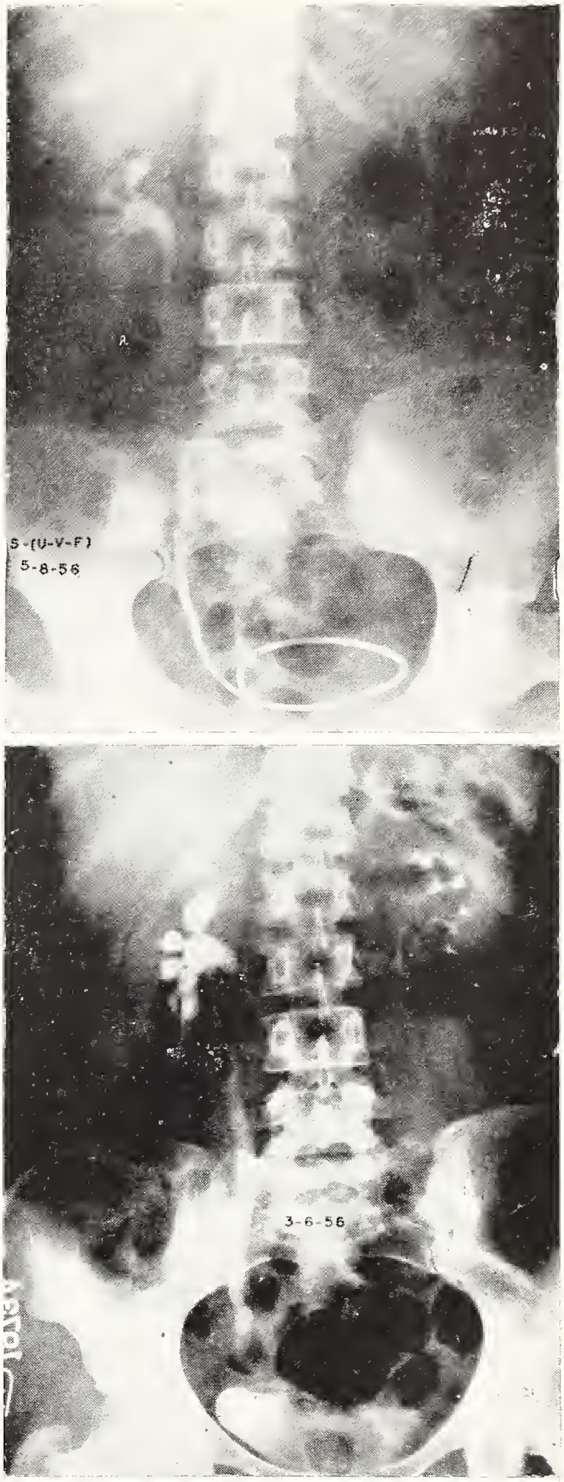
3. The partially mobilized terminal ureter is easily pulled into the bladder, the end split and the flaps sutured loosely to the vesical mucosa. External sutures are then placed through the ureteral and vesical serosa and muscle carefully avoiding tension and angulation.

4. The cystotomy incision is closed and the bladder drained both extraperitoneally and by Foley catheter.

When the ureter can not be anastomosed, Ockerblad[14] has described a method of utilization of a tubular flap to bridge the gap. As shown, a flap of adequate length is outlined in the vesical fundus and the tube constructed to which the ureter is directly anastomosed. The bladder defect is easily closed. The use of a catheter and drainage is similar to that described in the method of direct anastomosis.

In retrospect, I think that in two of the "failure" cases, utilization of this method might have spared the patient nephrectomy.

When the damage to the distal ureter is so great that the defect may not be bridged by a



Case A.S: During total hysterectomy for fibroids there was rather severe bleeding from the region of the right broad ligament. This was controlled by multiple clamp and ligatures. Postoperatively, abdominal pain, distension and flank pain were followed by vaginal leakage. Three months later she was re-admitted and the ureter re-implanted into the bladder with complete recovery.

"bladder tube", the use of an isolated loop of ileum is both technically and physiologically feasible. The ileal segment, of desired length, is easily developed and anastomosed isoperistaltically to the proximal ureter and to the bladder, using a mucosa to mucosa technique.

This method has offered good early results, but enough time has not elapsed to prove its permanent value.

BLADDER INJURIES—IMMEDIATE MANAGEMENT

Whenever possible, the bladder injury should be immediately corrected. The prompt recognition of a bladder laceration, closure with chromic 0, Foley catheter drainage and extraperitoneal drainage will usually be followed by success. Where there has been trauma to the bladder and the urinary drainage is bloody, Foley drainage for 5 to 7 days may prevent serious delayed complications. Occasionally when a fistula is recognized, prolonged catheter drainage may result in spontaneous cure. When this does not follow, immediate surgical closure should not be attempted

BLADDER INJURIES—DEFINITIVE MANAGEMENT

The patient with a vesico-vaginal fistula is usually an outcast in both society and her home. Yet, one must never allow either the patient or the referring physician to force one to attempt surgery too soon. We believe that usually at least three months should elapse to insure clearing of the infection; cleaning of the necrosis; and re-establishment of blood supply.

Methods of Repair

1. CYSTOSCOPY AND FULGURATION — small fistulas may often be closed by careful fulguration and prolonged drainage. This method was adequate in five cases in our series. It was attempted in six others. The method is only applicable where the defect is small and the surrounding tissue healthy.

2. VAGINAL PROCEDURES: this approach is more often favored by the gynecologists who claim it is safer and easier (?). We utilize a vaginal approach only for lesions near the trigone and bladder neck, and even in these cases we may use a combined approach. Although there are many methods of closure, they will in general fall into the following three types:

a) THE SIMS — EMMETT TECHNIC: The fistula is exposed vaginally and the tract saucerized for a distance of 6 to 12 mm. Approximation, without tension, is then carried out with interrupted silver wire. This may be aided by the use of lateral, tension relieving vaginal incisions. The bladder is drained for 10 to 14 days with a Foley catheter. The sutures may be removed at that time.

b) VAGINAL CLOSURE IN LAYERS: We prefer this method, feeling that it employs better surgical principles and technic. The fistula is exposed vaginally and the vagina is then freed with blunt and sharp dissection for a distance of about 2 cm. from the tract and bladder. At this stage the use of a small Foley catheter for counter-pressure may be quite helpful. Where there is concern about the ureters, cystoscopy and ureteral catheterization may be performed before starting the definitive surgery.

The edges of the fistula are carefully freshened and closure carried out in layers longitudinally, using atraumatic chromic 00. As shown, the vagina is closed transversally. It is important that the cardinal surgical principles of *no tension, careful hemostasis,* and *prevention of dead spaces* be carefully observed.

c) PARTIAL COLPOCLEISIS (Latzko)—This procedure has a limited use in cases where the fistula has followed total hysterectomy and is located high in the vault and where further shortening of the vault will not be a deterring factor. In this procedure the denuded posterior vaginal wall is used as a flap to close the defect. With this method, there need be no sutures in the bladder musculature. Healing is usually prompt and without complications.

3. SUPRAPUBIC EXTRAPERITONEAL, TRANSVESICAL AND TRANSABDOMINAL APPROACHES: Along with most urologists and general surgeons, we prefer this approach for fistulas which are high in the vault as we feel that exposure is better, closure easier, and the vault less apt to be shortened. Usually we work both intra- and extraperitoneally and with traction on the tract, the bladder is freed from the vault and the fistulous tract carefully dissected free from both the bladder and vagina. Closure in layers without tension is usually quite simple. Often we will close tightly around the traction suture, later cutting this suture and allowing the ball which has given good counterpressure during the dissection, as shown in the slide, to fall into the vagina. We routinely employ suprapubic drainage as we believe that there is no added risk, and if the urethral catheter should become obstructed, the alternative drainage channel will be invaluable. Both catheters are maintained on drainage for about 14 days. Although used by the "old-timers",

we strongly condemn the principle of vaginal cystotomy drainage.

4. URETERO-SIGMOIDOSTOMY: This is an admission of defeat in the management of vesico-vaginal fistulas and will be of rare use. I do not believe it need be discussed in this paper.

SUMMARY AND CONCLUSIONS

The problem of surgical trauma to the ureter and bladder has been reviewed. There has been no significant change in the incidence of these complications during recent years probably because of "improvements in technique" being offset by "more courageous surgery".

The causes of these complications are: 1) complicated surgery; 2) faulty technique; 3) poor exposure; and 4) unrecognized anomalies.

Eighty-nine cases were studied in detail and it appears quite significant that approximately 50 per cent of the ureteral injuries were followed by either a poor result or nephrectomy. Lacerations of the bladder were unsuccessfully handled in 14 per cent of the cases, and 16.6 per cent of the vesico-vaginal fistulas were failures.

The management of these complications has been discussed with emphasis on simplicity of technique and stressing the value of delay before attempting definitive repair.

It is hoped that future problems may be prevented by recourse to some of these suggestions.

REFERENCES

1. Aschner, P. W.: Journal or Urology, 69:6 774, 1953.
2. Baird, H. H. and Justis, H. R.: JAMA, 162;15, 1357, 1956.
3. Bigg, R. Campbell and Dennehy, P. J.: British Journal of Surgery, 40; 164, 596, 1952.
4. Benson, R. C. and Hinman, F. J.: Transamerican Association GU Surgery 47, 220, 1955.
5. BURCH, J. C. and Lavely, H. T.: American Journal of Surgery 79, 819, 1950.
6. Burns, Edgar and Peiser, Irving: Transamerican Association GU Surgery 47, 215, 1955.
7. Burns, R. A.: Journal of Urology 74:3, 348, 1955.
8. Coplan, M. M., Woods, F. M., and Melvin, P. D.: Journal of Urology 73:5, 790, 1955.
9. Coplan, M. M., Woods, F. M., and Melvin, P. D.: Proceedings North Central Section of the AUA, 64, 1955.
10. Everett, H. S., and Mattingly, R. F.: American Journal Obstetrics and Gynecology 71:3, 502, 1956
11. Graham, J. W., and Goligher, J. C.: British Journal of Surgery 42:172, 151, 1954.
12. Holloway, H. J.: American Journal of Obstetrics and Gynecology 60, 30, 1950.
13. McKay, H. W., Baird, H. H., and Justis, H. R.: JAMA 154:3, 202, 1954.
14. Ocherblad, Nelse F.: Journal of Urology 57, 845, 1947.
15. O'Heeron, M. K., Rapc, M. G. and Fish, J. R.: Southern Medical Journal 49: 1241, 1956.
16. O'Conor, V. J.: American Journal of Obstetrics and Gynecology, 162:13, 1201, 1956.
17. Prentiss, R. J., and Mullenix, R. B.: JAMA 145; 16, 1244, 1951.
18. Rusche, Carl: Transamerican Association GU Surgery 47, 210, 1955.
19. St. Martin, E. C., Trichel, B. E., Campbell, J. H., and Locke, C. M.: Journal of Urology 70:1, 51, 1953.
20. Weir, W. C.: American Journal of Obstetrics and Gynecology 56, No. 6, 1151, 1948.
21. Weir, W. C.: American Journal of Obstetrics and Gynecology 42, No. 2, 285, 1941.
22. Wishard, W. N.: Proceedings North Central Section AUA 93, 1954.
23. Falls, H. C.: Urologic injuries in Gynecology, F. A. Davis Co.

Magnetic Removal of Foreign Bodies

By

MURDOCK EQUEN, M.D., F.A.C.S.

Founder and Chief of Staff
of Ponce de Leon Infirmary

Atlanta, Georgia

The Use of the Alnico Magnet in the Recovery of Foreign Bodies from the Air Passages, the Esophagus, Stomach and Duodenum

Written in an informal, conversational style and abundantly illustrated with roentgenograms, this book can be read with interest by many groups, especially bronchoscopists, pediatricians, general practitioners, gastroenterologists, otolaryngologists, roentgenologists and chest surgeons.

- Describes and illustrates the various modifications the author has made in the original Alnico magnet and the auxiliary apparatus, often of his own design, that he has used
- Describes the author's *technics*
- Discusses *roentgenologic diagnosis*, including *some original pointers*
- Points out disadvantages, contraindications and *precautions*

104 pages 119 illustrations
Published 1957 Sent on approval, $4.50

CHARLES C. THOMAS - PUBLISHER
301-327 East Lawrence Avenue
Springfield, Illinois

The Traction Signs of Compression of the Sciatic Nerve Roots*

EDWARD A. ATTIX, M. D.†
Hattiesburg, Miss.

Pain in the lumbar area of the back or at the lumbosacral junction is one of the most frequent complaints that bring patients to their physicians. This 'low back pain," which has for many years been termed "lumbago," is often associated with pain in one or both lower extremities. This pain in the lower extremities has been called "sciatica" if it corresponds in distribution to the course of the sciatic nerve from the level of the sciatic notch, down the posterior aspect of the thigh and calf. However, as our understanding of the multitude of conditions that may be responsible for "lumbago" and "sciatica" has increased, there has been rather widespread confusion about how to differentiate these conditions.

The list of physical signs of, and clinical tests for, lumbago and sciatica has grown endlessly so that now it is difficult for the average physician to find a single source that presents a comprehensive and logical approach to the problem. Some important recent contributions to the medical literature have resolved many of the difficulties frequently encountered, and it is the purpose of this paper to organize these under one heading.

The most important distinction that needs to be broadcast at this time is the one between "referred" and truly "reflex" pain. There is a popular misconception that all pain in the back that is accompanied by pain perceived in the lower extremities is due to compression of nerve roots. In the past, great emphasis has been placed on teaching medical students the anatomy and pathology of the nucleus pulposus. There is no denying the dramatic relief of symptoms that patients with ruptured intervertebral disks experience following careful surgical excision.

It is equally impossible to deny that there are many patients with severe lumbago and sciatica who never demonstrate either the reflex or sensory changes which textbooks would lead one to believe invariably accompany these symptoms. It is the opinion of some observers that this pain down one lower extremity in a patient with intact reflexes and tactile sensation is due to intermittent or minimal protrusion of the nucleus pulposus.

Kellgren[1] demonstrated that the representation of stimuli arising in structures deep under the skin and subcutaneous tissue is organized according to "sclerotomes." These "sclerotomes" are similar to the "dermatomes" in that they are segmentally arranged but the patterns differ profoundly from those of the dermatomes. Thus, the sclerotome of a given segment does not comprise the structures lying deeply beneath the dermatome of that same segment. To be sure, it is unreasonable to expect such a correlation when it is remembered that the skin and adnexa arise from ectoderm and the muscles and ligaments arise from mesoderm. More recently, Feinstein and associates[2] attempted to map out these sclerotomes in medical students by injecting hypertonic saline solution into the interspinous ligaments and paravertebral muscles of the lumbar area. They demonstrated definite patterns of "referred" pain which correspond to these "sclerotomes" but it is to be emphasized that sclerotomes show much more variability from individual to individual than do dermatomes. The subjects regularly described the pain as "dull" and "aching," terms frequently used by patients in describing the pain they perceive in the lower extremities associated with low back pain. In addition, these authors demonstrated deep tenderness in the area to which the pain was referred.

Thus, if we recognize that the pain in the lower extremities associated with lumbago may be either "referred" from a lesion anywhere in a sclerotome of bizarre and irregular pattern, or actually due to compression of a nerve root with truly "reflexed" pain, we have made an important step toward understanding the complaints of these patients. The main decision to be made, then, is whether the pain is "referred" or truly "reflex" pain.

There are several tests which can be performed quickly by the examiner to determine definitely the presence of compression of the sciatic nerve roots. If results of these tests are positive, they indicate such compression. If they are negative, the examiner is forced to conclude that the pain is "referred" rather than "reflex."

One of these tests has only recently been reported[3] and another lately rediscovered[4]. It is believed that presentation of a routine for the orderly performance of these tests will prove to be a valuable tool in establishing a definite diagnosis and in determining the effectiveness of treatment of these patients. All are based on the same mechanism; if there is a lesion producing significant compression of the sciatic nerve or its roots, it will cause deviation of the nerve from its normal course. The nerve or nerve root will be wrapped around the compressing mass in the same way that a cable passes over a pulley (Fig. 1). Therefore, when traction is applied to the sciatic nerve, a significant vector of the traction force will result in increased compression of the nerve and the patient will feel pain which seems to extend distally along the course of the nerve (Fig. 2). These signs are best classified as the traction signs of compression of the sciatic nerve roots.

---

†From the Department of Orthopedics, Ochsner Clinic, New Orleans, La.

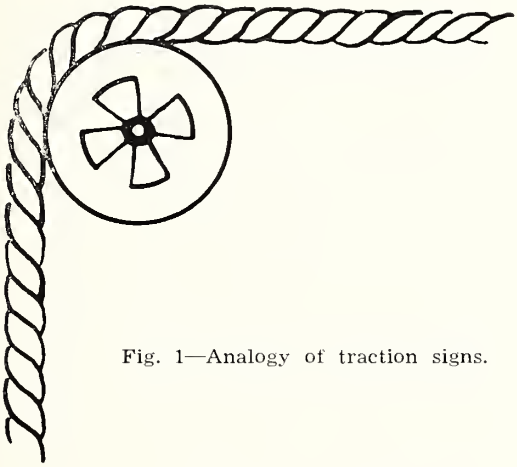


Fig. 1—Analogy of traction signs.

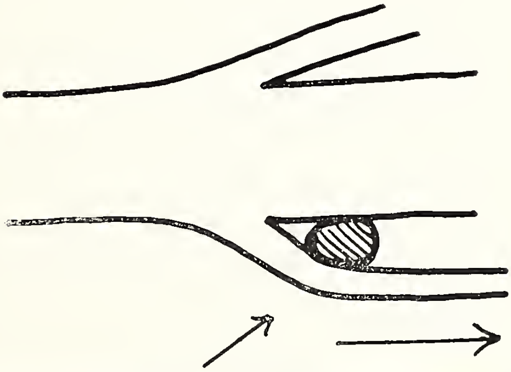


Fig. 2—Mechanism of traction signs in compression of nerve roots.

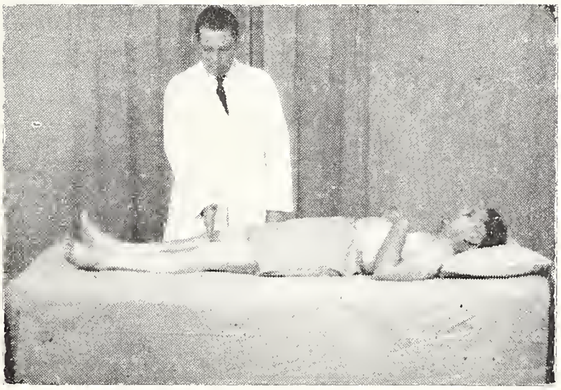


Fig. 3—Position for performance of traction signs.

The tests have been arranged in order of increasing specificity, so that theoretically if the result of the first test is negative all the other results will be negative. This is more than a theoretic possibility. I have been impressed by the repeated confirmation of this logic in clinical circumstances. The reflex and sensory changes may thus be properly interpreted as evidence of prolonged compression of the peripheral nerve and the examiner need not wait for their appearance to make the diagnosis. For the same reasons, myelography, which many are reluctant to undertake, can be reserved as an immediate preoperative procedure to determine the exact level of the compression. Myelography is still necessary, however, since these tests give no indication of the root or roots involved. Even in the presence of reflex and sensory changes, the possibility of a congenital pre-fixed or post-fixed lumbosacral plexus is great enough to warrant myelography.

With these advantages and minor disadvantages in mind, the following sequence for performance of the tests is proposed in the hope that others will find it as helpful as I have.

1. The Straight Leg Raising Test of Laségue

This test, to which Laségue's name is widely applied, was first described by one of his pupils, Forst[5], in a classic paper published in 1881, many years after the death of the preceptor. Proper interpretation of the test is based on the production of pain, which begins in either the lower lumbar area or in the region of the greater sciatic notch and extends down the dorsal aspect of the lower extremity for a variable distance. If the patient perceives no pain or experiences only pain in the back or gluteal area, the result of the test cannot be properly recorded as positive. Performance of the test is as follows:

1. With the patient lying supine on the examining table, the examiner stands at the side of the table, situating himself at the level of the patient's knee (Fig.3).

2. The patient is then instructed to relax and entrust the lower extremity to the examiner.

3. Placing one hand on the patient's patella to maintain the knee in extension, the examiner grasps the patient's heel in the palm of his hand and slowly raises it from the table (Fig. 4).

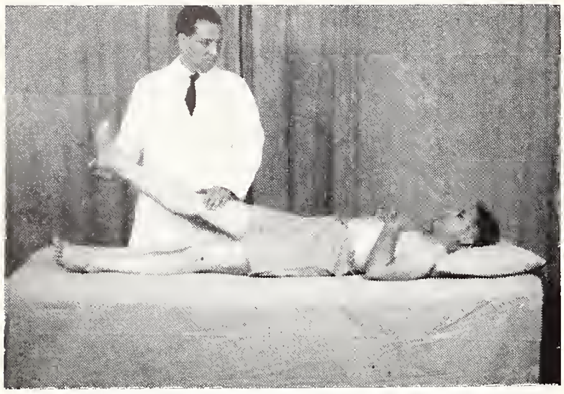


Fig. 4—The Lasègue straight leg raising test.

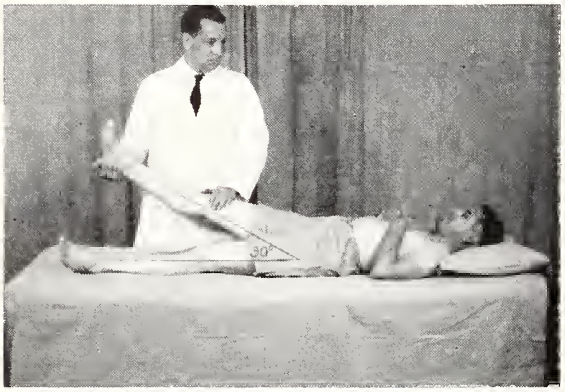


Fig. 5—Angle at which pain begins.

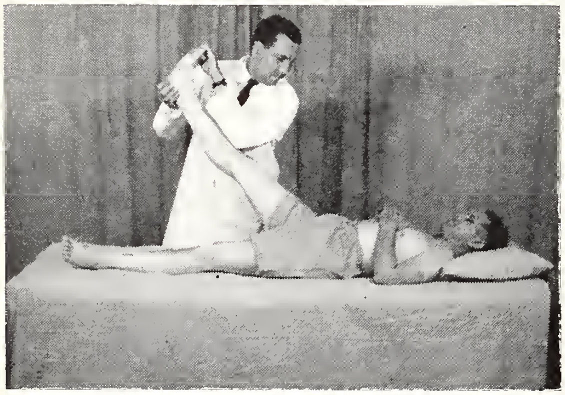


Fig. 6—Dorsiflexion test of Fajersztajn.

4. It is advisable to observe the patient's face during this straight leg raising, for as he begins to feel pain, his facial expression will give some indication of the severity.

5. The heel should be raised only to that point where pain is first felt and should not be carried to the point where severe pain and muscle spasm result, since these will interfere with interpretation of the next tests in the sequence.

6. An estimate is then made of the angle that the lower extremity makes with the plane of the table top and this angle is recorded on the patient's record. It will serve as a gauge of the degree of nerve root compression and, when repeated later during the course of treatment, as an index of recovery (Fig. 5).

Explanation of a Positive Result of the Straight Leg Raising Test

This test is dependent upon the fact that the sciatic nerve passes behind the axis for the flexion-extension of the hip joint. When the hip is flexed, traction is exerted on the sciatic nerve because of this arrangement at the hip. If the nerve or its roots are completely unencumbered, it has been shown that such traction may result in the nerve roots traveling distally through an excursion of two to six millimeters, when measured at the level of the intervertebral foramina. If the nerve is deviated from its normal course by some extrinsic mass, such as a herniated nucleus pulposus, such tension within the long axis of the nerve will increase the compressing force on the nerve at the level of the impinging mass and pain will be perceived with typical sciatic radiation.

Interpretation: The chief difficulty in interpretation of the results of the Lasègue test hinges on the belief that mere production of lumbosacral or gluteal pain constitutes a positive result. There is an endless list of conditions that could be associated with production of mere lumbosacral pain on straight leg raising. The example that immediately comes to mind is contusion of the lumbar paravertebral muscles with increased tone, if not spasm, of these muscles. In such a case, the pull of the hamstrings on the pelvis as the leg is raised would cause flexion to take place at the lumbosacral joint and result in pain. Similarly, any condition associated with spasm of the lumbar paravertebral muscles should be associated with pain in these muscles during straight leg raising, the acuteness of the angle the leg makes with the table being proportional to the degree of muscle spasm present.

For these reasons the Lasègue test is not specific and a false positive result is frequently recorded. To add to the confusion, a false negative may be reported if the test is improperly performed. Unless the knee is maintained in constant extension during elevation of the heel, the increasing stretch on the hamstrings will produce flexion at the knee and relieve the traction on the sciatic nerve. Avoiding these pitfalls, the examiner proceeds to the next test in the sequence.

II. The Dorsiflexion Test of Fajersztajn

Approximately twenty years after Forst's important contribution to the medical literature, Fajersztajn[6] added a refinement to the straight leg raising test that has many times been credited to the long dead Lasègue. This test is dependent upon the same mechanical principle of traction in the long axis of the sciatic nerve resulting in increased compression of the nerve on any mass that has pushed it from its natural course. It is characterized by similar lack of specificity and is based on the anatomic fact that the direct extension of the sciatic nerve, the posterior tibial nerve, passes behind the axis for dorsiflexion and plantar flexion of the tibiotalar point. Thus, dorsiflexion at the ankle increases the traction on the sciatic nerve and should produce pain extending down the posterior aspect of the thigh and calf. It should always follow the straight leg raising test and is performed in this manner:

1. After the examiner has completed the straight leg raising test, the leg is held at the level just below the angle where pain began.
2. The hand that had been maintaining the knee in extension by pressure on the patella is removed and that elbow is applied to the anterior tibia to maintain knee extension while the hand thus freed grasps the toes of the patient's foot (Fig. 6).
3. The patient's foot is then slowly dorsiflexed while the examiner watches the patient's face for an expression of distress.
4. The result is recorded as positive if the patient complains of pain extending down the posterior aspect of the thigh and calf.

Sources of False Positive and False Negative Results

Although the dorsiflexion test is not as inaccurate as the straight leg raising test when properly performed, it must be carried out much more carefully to avoid false positive and false negative results. If the examiner's elbow does not maintain the knee in extension, dorsiflexion of the foot will effect flexion at the knee because of the origin of the gastrocnemius above the knee and any tension generated in the sciatic nerve will be relieved by the flexion of the knee. Similarly, if the examiner maintains the knee in *almost* complete extension, forceful dorsiflexion will produce hyperextension of the knee, again through mediation of the gastrocnemius, and this will cause a sudden pull on the hamstring muscles. The first mechanism will cause a false negative response; the second a false positive response for any of the reasons such a result may occur in the Lasègue test. Another important source of false positive responses is inherent in this test. If, for any of a number of reasons, there is tightness, shortening or an area of local injury in the hamstring or gastrocnemius muscles, the patient may complain of pain in these areas. Unfortunately, many conditions that cause pain in the back result in increased tone or shortening in these muscles, and a false positive will be recorded in just those cases in which it is most important to rule out the presence of compression of the nerve roots.

Obviously, a more definitive test is necessary to establish the diagnosis of compression of nerve roots even if the first two tests have given positive or suggestive responses.

III. The Posterior Tibial Nerve Test of Cram

In 1953, Cram[5] described a new sign of compression of the sciatic nerve root based on the same principle of traction on the nerve resulting in reflex pain in the presence of compression on the nerve or its roots. It has an obvious advantage over the Lasègue and dorsiflexion tests because, if properly performed, traction is exerted only on the nerve; all of the previously mentioned sources of false positive and negative responses are eliminated. I have found it an extremely valuable tool in evaluating patients with "lumbago" and "sciatica."

This test is based on the fact that the posterior tibial nerve, which is the direct extension of the sciatic, crosses the popliteal space in an area where it is easily accessible to direct pressure. If the knee is flexed and the sciatic nerve taut because of flexion at the hip, the posterior tibial nerve is palpable as a separate cord stretched across the middle of the popliteal space. It is easily distinguishable from the hamstring tendons which form the medial and lateral boundaries of the popliteal space.

The test is logically performed after completion of the Lasègue and dorsiflexion tests. It is carried out in the following manner:

1. After completion of the dorsiflexion test, the examiner releases his hold on the foot and maintains the heel at the angle where pain first began in the straight leg raising test.
2. The knee is then flexed slowly about 20° and pain, whether due to traction on the sciatic nerve or tension in the hamstrings with flexion of the lumbosacral joint, is relieved. It is important to question the patient and confirm this.
3. It is then possible to flex the thigh another 15° or so while maintaining the flexion in the knee without producing pain because of the release of traction on the sciatic nerve (Fig. 7).
4. In this position the posterior tibial nerve is palpable stretching across the popliteal space just

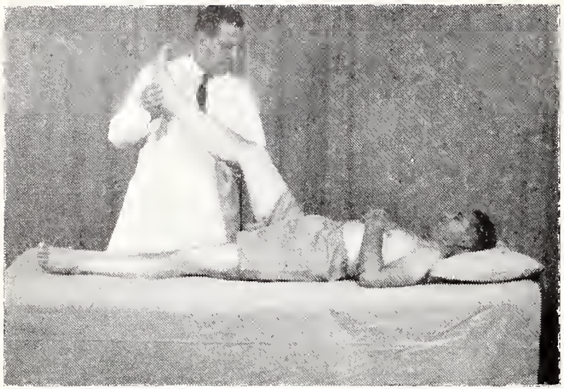


Fig. 7—Preliminary step to performance of Cram test.

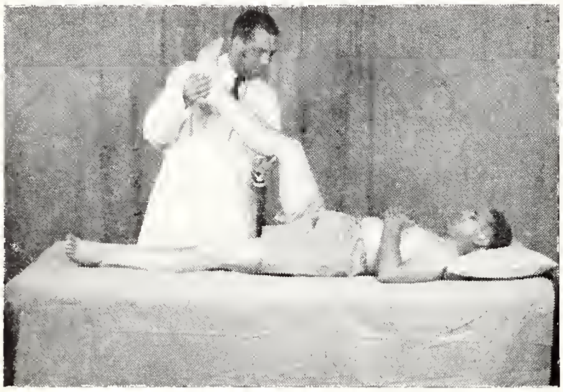


Fig. 8—The Cram test.

beneath the deep fascia. It is found at a point midway between the easily palpable medial and lateral hamstring tendons. Pressure is exerted directly over the nerve with the fingertips after it has been definitely identified (Fig. 8). This should result in immediate pain extending usually from the buttock or lumbosacral region to the calf or foot.

Value of the Cram Test

Many patients in whom results of the Lasègue and dorsiflexion tests are positive will be found to have negative responses to the Cram test. Such a finding is extremely important for proper interpretation of the first two tests, since all three are based on the same mechanism. The only disadvantage of the Cram test is a minor one and does not seriously detract from its usefulness. Because it is possible to exert only a small increase in traction on the nerve with this method, minimal compression of the roots will not be detectable. This disadvantage may be avoided if care is taken to flex the knee no more than 20° and the hip to a point just before pain is produced

One of the chief advantages of the Cram test is that there are no major sources of false positive responses if it is performed meticulously. The examiner is thus prevented from making the costly mistake of assuming that the patient has a lesion compressing the sciatic nerve roots and perhaps recommending laminectomy. This danger is a very real one since a high percentage of cases of "lumbago" and "sciatica" is due to involvement of the lumbosacral joint and false positive results of the Lasègue and dorsiflexion tests may be recorded. Many of these patients would be more appropriately treated by lumbosacral fusion than by laminectomy if symptoms are severe enough to warrant surgical intervention. An ill-advised laminectomy may only impose further loss of skeletal stability at an already unstable lumbosacral joint. For practical purposes the result of the Cram test will be positive in all patients with compression of the sciatic nerve roots whose symptoms are severe enough to make operation a serious consideration. It is, for this reason, a valuable addition to the routine examination and should be performed regularly. After repeated use of this test, I have been impressed with its specificity and have never encountered a positive response to the Cram test without equally positive results of the Lasègue and dorsiflexion tests. Furthermore, in the few patients with positive results of the Cram test who had subsequent laminectomies, all were discovered to have compression of the nerve root.

IV. The Well Leg Raising Test of Fajersztajn

In a small percentage of patients in whom the results of the first three tests are positive, a fourth test, called the well leg raising test, will give further confirmative evidence of compression of the nerve roots. This test was originally described by Fajersztajn but was virtually lost in the medical archives until 1950 when Woodhall and Hayes[4] again called attention to it. It is based on the same principle of traction on the nerve roots as are the others.

Unlike the first three tests, traction is exerted proximally on the nerve roots instead of distally on the nerve or its direct extension, the posterior tibial. This traction is of much smaller magnitude and will affect, for practical purposes, only the nerve roots.

The test consists simply in performance of the straight leg raising test of Lasègue on the unaffected side. Fajerztajn demonstrated in cadavers that straight leg raising on one side will pull the sciatic nerve roots on that side distally. In addition, as those nerve roots move distally, a small amount of traction is exerted proximally on the nerve roots on the contralateral side. Thus, if there is any compression on the contralateral side, this well leg raising will result in pain perceived extending down the opposite side. Fajersztajn called this the crossed sciatic phenomenon or the sciatic paradox. As would be expected, the traction transmitted to the contralateral side is minimal and the result will be positive only if there is severe compression on the affected side.

Woodhall and Hayes reported positive results of the well leg raising test in only about one-third of a series of 293 cases of compression of the sciatic nerve roots, proved at laminectomy. More important, only two patients out of 100 with positive results of the well leg raising test failed to demonstrate any compression or adherence of the sciatic nerve roots at surgical exploration. Thus, the test has shown an accuracy of 98 per cent in their series at least, and it is obviously the most specific of the traction signs of compression of the sciatic nerve roots.

Since well leg raising will pull the nerve roots on the affected side medially as well as proximally, the result of the test is most often positive in lesions that compress the roots from the medial side or in "axillary" protrusions of the nucleus pulposus, which lie in the "axilla" between the nerve root and cauda equina (Fig. 9). Similarly, we would not expect a positive result if the compressive lesion lay lateral to the nerve root since well leg raising, by pulling the roots on the affected side medially, would tend to relieve compression.

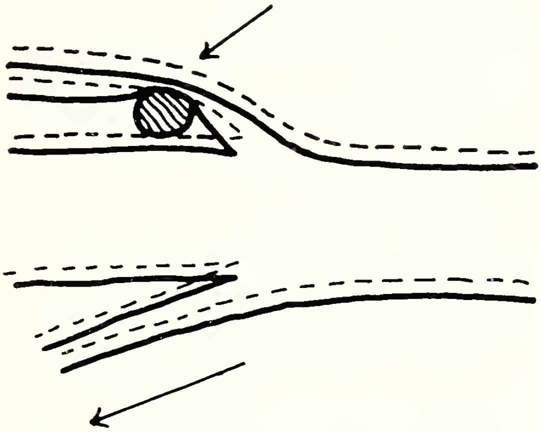


Fig. 9—Mechanism of the well leg raising test.

V. The Steindler Test As an Aid to Interpretation

Regular use of the foregoing series of tests has proved extremely helpful in the logical interpretation of symptoms referable to the low back. However, an occasional case arises in which the results of the Lasègue and dorsiflexion tests are suggestive and that of the Cram test is difficult to evaluate because of extreme obesity with poor definition of the nerve in the popliteal space or because of neurotic hyperirritability in the patient which makes the patient's wincing responses suspect. In such instances, there is another supplementary procedure which will frequently resolve the findings into a logical pattern. It involves modifying a technic originally suggested by Steindler in 1938 to differentiate referred pain from truly reflex pain. He suggested injecting a local anesthetic, such as procaine, into any detectable area of tenderness in the lumbar or lumbosacral area. If the pain in the lower extremities is due to actual compression of the nerve root, there will be no relief; on the other hand, if the pain is merely referred, owing to stimuli arising in the soft tissues of the back that are accessible to procaine infiltration, such infiltration should result in relief of both the "lumbago" and "sciatica".

The Steindler test is extremely valuable in itself. When used in conjunction with the sciatic traction tests previously cited, it becomes even more informative. In most instances it will not be necessary to inject procaine into the local areas of tenderness if the tests are performed in the manner outlined. However, if the results are confusing, the examiner has merely to infiltrate sufficient procaine into the tender points about the lumbosacral junction to obliterate all tenderness. Then, the sciatic traction tests are repeated and can be correctly interpreted, since such injections cannot be expected to relieve any reasonable source of compression or result in significant anesthesia of the nerve or its roots.

In addition, it is possible to confirm the accuracy of the Cram test in the event the Lasègue and dorsiflexion tests give false positive results and the result of the Cram test is negative. In such instances injections of procaine into areas of local tenderness, such as those frequently encountered in the lumbar paravertebral muscles and about the origin of the sacrospinalis from the posterosuperior iliac spines, will be followed by painless straight leg raising and dorsiflexion.

Prognostic Significance of the Traction Signs

One of the chief advantages of these tests based on sciatic traction is that results will be positive long before one can expect to discover any diminution of deep tendon reflexes or decreased cutaneous sensation to light touch or pin prick. These reflex and sensory changes will become evident only after the compression has persisted for a longer time or to a greater degree.

It is also well known that these reflex and sensory changes are often irreversible and may persist long after the compressing lesion has been relieved by conservative therapy or surgical removal as evidenced by the great numbers of patients who no longer suffer from lumbago or sciatica, yet display absent ankle jerks and areas of hyperesthesia on the lateral aspect of the foot or calf.

It is important, therefore, to employ the traction tests in evaluating the condition of the patient receiving treatment for compressive lesions of the sciatic nerve. If treatment is effective, the positive results of traction tests will become negative in the reverse order, the well leg raising test being the first, followed by the Cram test. The result of the Lasègue test may remain positive as the degree of compression diminishes, but it will be possible to elevate the heel to ever increasing heights as compression is relieved by conservative measures. Thus, the tests will not only aid in diagnosis but in determining, as time goes on, whether the compression is increasing or decreasing.

Summary

Attention is called to the little appreciated distinction between "referred" pain and truly "reflex" pain in the lower extremities. A system for differentiation of these, which depends on proper performance of several tests in certain sequence, is presented. All of these tests are based on the same mechanism of traction on the sciatic nerve producing increased compression at the level of a compressive lesion with resultant pain along the course of the nerve. The technic for performance of each test is described and possible causes of false positive and false negative responses are cited. Regular use of this series of tests will permit valuable conclusions as to diagnosis and effectiveness of treatment in cases of "sciatica" due to compressive lesions, such as herniated nucleus pulposus.

REFERENCES

1. Kellgren, J. H.: Observations on referred pain arising from muscle. Clin. Sc. 3:175-190, April, 1938.
2. Feinstein, B., Langton, N. K., Jameson, R. M. and Schiller, F.: Experiments on pain referred from deep somatic tissues. J. Bone & Joint Surg. 36-A: 981-997, Oct., 1954.
3. Cram, R. H.: A sign of sciatic nerve root pressure. J. Bone & Joint Surg. 35B:192-195, May, 1953.
4. Woodhall, B., and Hayes, G. J.: The well leg raising test of Fajersztajn in the diagnosis of ruptured lumbar intervertebral disk. J. Bone & Joint Surg. 32-A:786-792, Oct., 1950.
5. Forst, J. J.: Contribution a l'étude clinique de la sciatique, Paris, Thése, No. 33, 1881.
6. Fajersztajn, J.: Ueber das gekrewzte Ischiasphanomen. Wien. Klin. Wchsnchr. 14:41-47, 1901.
7. Steindler, A.: Differential diagnosis of pain low in the back. J. A. M. A. 110:106-113, Jan. 8, 1938.

The writer does the most who gives his reader the most knowledge and takes from him the least time.— Sidney Smith

Gastrectomy*

JONES W. LAMB, M.D.
GUY P. SHARPE, JR., M.D.
Greenwood, Miss.

We do not propose at this time to discuss the very extensive and voluminous literature pertaining to the indications for and the technique of gastrectomy. Those interested in this subject are doubtless quite familiar with the literature. Those whose interests are not primarily surgical are, nonetheless, interested in the indications for gastrectomy and are desirous of knowing what may be expected from this procedure.

We propose to recite our *personal experience* with resections of the stomach, to set forth the *indications* which we believe are valid for this procedure, and to offer the *conclusions* which, at the moment, we believe tenable.

In one manner or another, during our period of training, we had occasion to encounter a total of 178 gastrectomies, for which we wish to express our appreciation to Dr. Willard H. Parsons, chief of the surgical service, at the Vicksburg Hospital and Clinic. We have had an additional personal experience of 30 gastrectomies during the past three years. It is from this total of 208 cases that we shall offer our present comments.

It is perhaps advisable in the beginning to state certain *definitions*. Our concept of subtotal gastrectomy is one in which, usually, about three-fourths of the stomach is removed. We employ the term "radical subtotal gastrectomy" to describe the operation in which not only is there resection of the major part of the stomach but also there is inclusion, in the resection, of the greater omentum, the gastrocolic omentum, the gastrohepatic omentum, and all node-bearing areas. At times, in doing gastrectomy for carcinoma of the stomach, it is obligatory that certain organs involved by contiguity of structure or otherwise must in part or in whole be resected. The spleen may be included because metastasis to the nodes in this area is not infrequent and removal of the spleen often simplifies the procedure. Of course a *variable* amount of duodenum is included. The transverse colon and other structures may have to be included. Unquestionably, in resections of such magnitude, the operative risk is increased. By the same token, if such resection is indicated, hope of cure is decreased if this calculated risk is not assumed.

Total gastrectomy, if indicated, should be performed. It is usually indicated in lesions involving the upper half of the stomach. We believe, however, that in carcinoma of the lower half of the stomach that "radical subtotal gastrectomy" offers as great a hope of cure as total gastrectomy. Certainly, it provokes far fewer postoperative complications. Despite the opinions expressed elsewhere, it has been our experience that patients subjected to total gastrectomy do have serious nutritional disturbances postoperatively. However, we do not advocate an incomplete operation for malignancy. Likewise, we do no defense for an operative procedure more massive than that required when such procedure is likely to be followed by serious postoperative disturbances.

There can be no argument that primary gastric carcinoma should be treated surgically. Without surgical intervention the mortality is essentially 100 per cent. It is perfectly true that an occasional patient with carcinoma of the stomach may live for a fairly protractive period of time without surgical aid but, such is not likely to be the rule. Certain other malignancies of the stomach as leiomyosarcoma, reticulum cell sarcoma, lymphosarcoma, Hodgkin's Disease, etc., comprise about 5 per cent of gastric malignancies. Since they are rarely diagnosed preoperatively and since they comprise such a small proportion of cases, we will not discuss them further.

The individual suspected of having cancer of the stomach should be submitted to surgical exploration, unless there are compelling reasons to the contrary. Distant metastases, most often encountered on the rectal shelf, the presence of jaundice, of ascites, of skin nodules, etc., mean that gastrectomy has little, if anything, to offer in the way of palliation, and nothing at all in the way of cure. Palliative gastrectomy under certain circumstances has much to offer the patient. Palliative gastroenterostomy for carcinoma of the stomach has essentially nothing to commend it. Jejunostomy we regard as an operation of despair and futility.

Admittedly, the diagnosis of gastric cancer in its early stage is difficult. The patient beyond 40 years of age, more emphatically the male patient, who loses his desire for meat, whose dietetic habits become definitely impaired, who has an achlorhydria or an unexplained anemia should be considered likely to have carcinoma of the stomach, unless and until it can be disproved. One should with far greater frequency advise exploration. Only, in this manner, will we be able materially to improve our end results in the treatment of this disease.

---

*Read before the Sixty-sixth Semi-Annual Meeting of the Delta Medical Society, October 10, 1956, at Greenville, Miss.

We believe that the patient with ulcer of the stomach, unless some compelling reason to the contrary exists, should be operated upon. It is perfectly true that under medical management, a benign gastric ulcer may well enough improve and may even in time be cured. But it can certainly be stated that if one undertakes to treat medically many so-called gastric ulcers, one dooms to death from carcinoma of the stomach certain individuals who otherwise would have lived. We believe that the medical management of gastric ulcer is fraught with peril, whereas the surgical treatment of gastric ulcer we believe to be a relatively simple procedure and one accompanied by excellent end results. The internist who advises medical treatment for gastric ulcer without surgical consultation does indeed assume a very tremendous responsibility.

Resection for ulcer of the duodenum, on the contrary, is frequently by no means technically simple and carries a mortality probably three times as great as that of gastrectomy done for gastric ulcer. At that, the mortality, even under difficult circumstances, as for an old perforation with scarring and shortening of the duodenum, should not exceed 3 per cent.

We do not advise prolonged medical management of patients with duodenal ulcers who have exsanguinating hemorrhages or who have repeated profuse hemorrhages. Those who maintain that these patients will not bleed to death have had limited experience in the management of the disease. We do not advocate emergency gastrectomy at the first signs of blood from the stomach or of blood in the stools. We do say that the patient who has massive hemorrhage should have a surgical consultation and very probably should have resection done. This is increasingly important in individuals at or beyond the age of fifty. The ulcer on the anterior wall of the duodenum is apt to have free perforation. The ulcer on the posterior wall rarely perforates, but bleeds. The patient with free perforation of a duodenal ulcer should be operated upon. The so-called conservative manner of treating these patients by intubation is anything but conservative. Whether or not the person with acute perforation of a duodenal ulcer should have, at that time, gastrectomy depends upon the circumstances, upon the experience and skill of the surgical team, and upon the time element.

We do not insist that in every instance at surgery the ulcer of the duodenum be excised. We prefer its excision. We are nonetheless prepared to state that it may be the part of wisdom in dealing with a low-lying ulcer, adjacent to the common duct, with a short contracted duodenal stump, to leave the ulcer in place. It has been our experience that under those circumstances, provided adequate gastrectomy is done, the ulcer will spontaneously heal and will remain healed. We believe that in patients who are bleeding, it is almost obligatory to remove the ulcer and to ligate the proper vessels.

It is not our desire or intention at this time to discuss the technical aspects of gastrectomy. We wish to state what we consider to be valid indications for partial gastrectomy.

INDICATIONS FOR PARTIAL GASTRECTOMY

I. In Certain Malignant Lesions of Stomach

II. In Peptic Ulcer

Indicated 50-100 per cent with gastric ulcer
Indicated 8-20 per cent with duodenal ulcer
Some cases of acutely perforated ulcers.

A peptic ulcer with associated obstruction of the pylorus or common biliary duct or one causing an hour-glass deformity of the stomach.

A peptic ulcer that has had repeated episodes of massive hemorrhage in the past, even though at present the patient is either not bleeding at all or showing only small amounts of occult blood in the stool.

Peptic ulcers that fail to respond to a reasonable trial of medical therapy.

A duodenal or gastric ulcer associated with excessively high acidity of the gastric juice.

Any gastric ulcer associated with an achlorhydria and the crater of which is demonstrated by roentgenography.

Any gastric ulcer demonstrated to be on the greater curvature.

Any gastric ulcer demonstrated to be distal to the incisura angularis and which does not show x-ray evidence of healing in two weeks of medical treatment, or which shows evidence of a subtracting defect from the marginal silhouette of the barium-filled stomach.

A duodenal ulcer associated with marked x-ray deformity of the pylorus and antrum caused by ulcerative gastritis, as in this type of lesion medical treatment is rarely successful.

A demonstrated perforated peptic ulcer that has been walled off. Only a few of these heal following medical treatment and those that do are liable to recur.

A duodenal or gastric ulcer which is exceptionally large.

III. In Large or Extensive Benign Tumors of the Stomach.

IV. In Sarcomas. The same considerations are present here as in carcinoma.

V. Miscellaneous conditions — partial gastrectomy with or without extirpation of other organs.

Carcinoma of duodenum-Whipple pancreaticoduodenectomy.

Malignancy of stomach or duodenum with metastasis—as a palliative procedure if the primary malignancy is removable.

Chronic relapsing pancreatitis.

Gastrojejunocolic fistula.

Finally, in summary, we would state:

1. Gastrectomy, done for the indications which we have recited and under the conditions enumerated, is a highly satisfactory procedure.

2. Mortality of resection for gastric ulcer is essentially nil and there will be essentially no postoperative complications.

3. Resection of a duodenal ulcer is far less often indicated. When it is indicated it should be done. The mortality rate should be less than 3 per cent including the more difficult cases.

4. Gastrectomy for carcinoma of the stomach is a far more formidable procedure and even in experienced hands will probably carry a mortality rate between 5 and 10 per cent. It may be parenthetically stated that the mortality rate without surgery is 100 per cent.

During the past three years we have had occasion to do thirty gastrectomies with one death, a mortality rate of 3 1/3 per cent. This patient expired suddenly on the sixth postoperative day, his course to that time having been uneventful. Unfortunately only partial necropsy was permitted. There was no leaking at the suture line and presumably this patient died of pulmonary embolism.

Twenty of the thirty cases referred to had subtotal gastrectomy; six had radical subtotal gastrectomy; one had total gastrectomy; and three had subtotal gastrectomy carried out as a step in a pancreatico-duodenal resection for carcinoma of the head of the pancreas.

With increasing experience and a sympathetic point of view on the part of internists and practitioners, who first see these patients, we believe that the operative mortality and the postoperative morbidity may be even further reduced.

DISCUSSION

Dr. Eustace H. Winn, Jr. (Greenville, Miss.)—I want to express my appreciation to Drs. Lamb and Sharpe for asking me to discuss this interesting paper on gastrectomy.

Since the time of Billroth and Volkmann the question of the proper approach to the surgical attack of disease of the stomach and duodenum has been a controversial matter. Gastroenterostomy, exclusion procedures, excision procedures, vagotomy alone, vagotomy with gastroenterostomy, and varying forms and degrees of resection of the stomach have all been tried. Of these, each may have its special application; but over all, gastrectomy has been time-tested, to be superior to all other methods. Yet, it is not the perfect answer.

We have come to the feeling, however, that there is a difference in the etiology of so-called peptic ulcer disease in the stomach and the duodenum, chiefly because of the fact that one rarely if ever finds that a peptic duodenal ulcer is proved to become malignant. Not so with the stomach. Thus, we deal differently with the approach to such problems in the duodenum and stomach.

Let us consider the duodenum. Peptic ulcer disease in the duodenum is primarily a medical disease and should remain so if care and attention and close follow-up is paid to the patient. It is only from the ill-managed ulcer patients or from the uncooperative ulcer patient that complications arise that necessitate surgical intervention. These complications are simply perforation, obstruction, hemorrhage and intractable pain. Dr. Sharpe has enumerated these indications for gastrectomy, but I would like to summarize these indications for surgery for the different complications of duodenal peptic ulcer disease.

Let us consider acute perforation. Although we see reports in the literature by reputable men who do primary gastric resection at the time of perforation with only slight increase in mortality, I cannot but feel that such a procedure is a little too radical and that simple closure of the perforation is the treatment of choice. Age, nutrition and the possibility of infection are factors that have to be considered. Only in the very exceptional case would I feel that primary resection at the time of perforation is the procedure of choice. In obstruction, as enumerated, I, too, feel that 75 per cent or better gastric resection is the procedure of choice, but it is not always possible to do a resection, particularly if the patient has hypo-chloremic alkalosis and his nutritional status is extremely poor following chronic long-range obstruction. Preferably, a gastroenterostomy can safely be done at the time with a later vagotomy or a resection with vagotomy.

In the instance of bleeding from a peptic duodenal ulcer, again we are faced in the literature with reputable opinions to the extremes of both conservative and active surgical management. I do not feel that every "bleeder" should have a gastrectomy but rather adhere to the schedule of management outlined by McCleary, Alsobrook, and Schell in their article in the *Annals of Surgery*, where the exsanguinating and uncompensated bleeder and the recurrent massive bleeder as described of Drs. Lamb and Sharpe have to be dealt with surgically.

With regard to intractable pain associated with peptic duodenal ulcer disease, I feel that a careful study of the patient should be made in an effort to gauge if it is really the intractable pain or in the "intractable patient."

We are all aware that there is a need for surgery for the complication of peptic duodenal ulcer but let us not forget that duodenal ulcer is primarily a medical disease which should be followed jointly by surgeon and internist. In the majority of cases an individual is better off with all of his stomach than just part of it.

In referring to peptic ulceration of the stomach itself, I would like to comment briefly about ulcers on the lesser curvature less than 2½ cm. in diameter in the pars media. I cannot help but feel that this is the one site in the stomach that a conservative approach toward surgical intervention should be followed, possibly, even in the face of achlorhydria. It has been shown that possibly 10 to 15 per cent of such lesions may eventually show malignant change, but these patients, by and large, have had an ulcer present for an extended period of time. It is extremely important that patients with an ulcer on the lesser curvature in the pars media of the stomach be followed closely with radiographic examinations at two-week intervals under strict ulcer management in the hospital. If the ulcer has not completely disappeared or shown almost complete healing in a month's time, surgical intervention should be strongly contemplated.

Other position of lesions in the stomach certainly fit the indications as outlined by Dr. Sharpe. I have certainly enjoyed discussing this interesting paper and I would like to reemphasize that a studied conservative approach to each peptic ulcer problem adhering to strict indications be carried out by the internist and the surgeon before the problem becomes actively surgical.

ANNOUNCING

The Twenty-First Annual Meeting
of

THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

Conference Headquarters — Roosevelt Hotel
March 3, 4, 5, 6, 1958
GUEST SPEAKERS

Carleton B. Chapman, M.D., Dallas, Tex.
Cardiology
Herbert Rattner, M.D., Chicago, Ill.
Dermatology
Charles A. Flood, M.D., New York, N. Y.
Gastroenterology
Robert A. Davison, M.D., Memphis, Tenn.
General Practice
Lawrence M. Randall, M.D., Rochester, Minn.
Gynecology
Bayard T. Horton, M.D., Rochester, Minn.
Internal Medicine
Perrin H. Long, M.D., Brooklyn, N. Y.
Internal Medicine
George N. Raines, Capt., MC, USN, Washington, D. C., Neuropsychiatry
Robert H. Barter, M.D., Washington, D. C.
Obstetrics
Ralph O. Rychener, M.D., Memphis, Tenn.
Ophthalmology
C. Leslie Mitchell, M.D., Detroit, Mich.
Orthopedic Surgery
Frank D. Lathrop, M.D., Boston, Mass.
Otolaryngology
Arthur H. Wells, M.D., Duluth, Minn.
Pathology
James Marvin Baty, M.D., Boston, Mass.
Pediatrics
Harold O. Peterson, M.D., Minneapolis, Minn.
Radiology
Jere W. Lord, Jr., M.D., New York, N. Y.
Surgery
Claude E. Welch, M.D., Boston, Mass.
Surgery
Ormond S. Culp, M.D., Rochester, Minn.
Urology

Lectures, symposia, clinicopathologic conferences, round-table luncheons, medical motion pictures and technical exhibits.

(All-inclusive registration fee — $20.00)

THE POSTCLINICAL TOUR TO MEXICO CITY, CUERNAVACA, TAXCO, AND ACAPULCO

Leaving March 7 from New Orleans and returning March 18, 1958
For information concerning the Assembly meeting and the tour
write, Secretary, Room 103, 1430 Tulane Avenue, New Orleans 12, La.

INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW

JOSEPH P. MELVIN, Jr., M.D. Cardiology
HARVEY F. GARRISON, Sr., M.D. Pediatrics
JAMES D. HARDY, M.D., and STAFF, Department of Surgery, University Medical Center .... Surgery

CARDIOLOGY

REVIEW: Cardiogenic Shock by Clarence M. Agress, M.D., and Maxwell J. Binder, M.D.
University of California School of Medicine,
Los Angeles, California
(*Americal Heart Journal*, Vol. 54, No. 3, Page 458)

This excellent review of cardiogenic shock aptly describes the condition at the beginning of the article by stating that it is a breakdown of the circulation, resulting from impairment of the function of the heart and characterized by hypotension, low pulse pressure, oliguria, cold clammy skin, and dulling of the sensorium. After listing such common causes of cardiogenic shock, such as acute myocardial infarction, cardiac tamponade, various types of myocarditis, septal perforation, papillary muscle rupture, etc., the article reviews the experimental background in the production of cardiogenic shock, reviews clinical coronary shock with its hemodynamic changes, and goes into a detailed discussion of the therapy of coronary shock.

The principal physiologic changes discussed in relationship to their possible production of coronary shock are: 1) Does the fall in blood volume explain the occurrence of shock? 2) Does marked acceleration of heart rate account for the shock? 3) Is coronary shock due solely to the amount of heart muscle damage? 4) How is total peripheral resistance related to the occurrence of coronary shock? It is well recognized that blood volume loss cannot be the cause of coronary shock as 40 per cent of circulating blood volume must be lost before severe shock occurs. It is also known that heart rates of 180 are necessary for the production of significant hypotension, and of course this degree of tachycardia almost never exists in the usual case of cardiogenic shock. In addition, shock is frequently present without tachycardia. It is also clear from animal and human data that the mild heart muscle damage is not the sole explanation for occurrence of coronary shock, but the studies of total peripheral resistance are quite interesting in their relationship to this shock state. The hemodynamic studies indicate that patients fall into one or two groups, that is: those in whom the cardiac damage is so great that even marked vaso-constriction cannot maintain the blood pressure, and those in whom failure of homeostasis is added to the basic myocardial injury so that the total peripheral resistance remains unchanged. In other words, some patients respond to cardiac damage and/hypotension by failing to constrict peripherally at all. Certainly heart failure is not an essential part of coronary shock and cannot be implicated either in its genesis or necessarily its sequelae. The available evidence points to the existence of peripheral mechanism not directly linked to the degree of myocardial damage. Whether these mechanisms are reflex or hormonal or both is unknown at the present time.

COMMENT: If we can pinpoint the cause for shock in the usual case of acute myocardial injury, and direct specific therapy toward this cause, the extremely high mortality of cardiogenic shock may be substantially reduced. If failure of peripheral resistance to increase following the hypotension of cardiac injury is the cause, then specific peripheral vaso-constrictor agents may be well employed. If there is a hormonal (that is, adreno-hypophyseal failure) background, then appropriate hormone therapy, which has been advised in the literature, may be necessary.

PEDIATRICS

A Study of Acute Respiratory Disease in Infancy — W. C. Taylor and C. H. Read. J. Pediat. 50:679-689 (June) 1957 (St. Louis).

One hundred infants of less than 3 years of age were studied during 2 6-month periods throughout the winter months of 1953-1954 and 1954-1955. They all suffered from respiratory infections sufficiently severe to require hospitalization. They were divided into 5 equal groups; the 1st group was given 0.1 Gm. sulfa-methazine per pound per day; the 2nd 30,000 I. U. dipenicillin G dibenzylethylene diamine in addition to 0.1 Gm. of sulfamethazine per pound per day; the 3rd 10 mq. of chlortetracycline per pound per day; the 4th 10 mg. of oxytetracycline per pound per day; and the 5th 10 mg. of tetracycline per pound per day. No significant differences between the 5 groups were observed when failure rate, temperature response, and duration of hospitalization were compared. Minor toxic effects such as 3rd, 4th, and 5th groups. Sulfamethazine and sulfamethazine plus penicillin were more effective in patients with pneumococcic infections than broad-spectrum antibiotics.

COMMENT

Apparently this subject should be interesting to all physicians at the present time, particularly those of us who are doing pediatrics. Our experience is apparently the same as that of the authors of this article. We have found very little would be accomplished in the treatment of colds with tetracycline. Our experience has been that we not only do not think it is effective but to the contrary, actually does more damage than it does good. Very few drugs are effective in the treatment of the ordinary or uncomplicated colds. The combination of penicillin and sulfa drugs in moderation certainly prevent many complications.

MISSISSIPPI ACADEMY OF GENERAL PRACTICE

POSTGRADUATE SEMINAR

January 22, 1958, is the date of the next Academy one-day course. In cooperation with the University of Mississippi School of Medicine and Lederle Laboratories, M.A.G.P. will sponsor "A Postgraduate Seminar—with Roundtable Discussions" at the Heidelberg Hotel, Jackson.

The program has been completed and a group of eminent speakers will appear. Beginning at 10:00 a. m., three scientific lectures will be given. The speakers are Dr. E. Grey Diamond, professor of medicine, Kansas University School of Medicine; Samuel F. Ravenel, clinical professor of pediatrics, Duke University School of Medicine; and Edward H. Hasbinger, Kansas City, Missouri.

Fount Richardson of Fayetteville, Arkansas, chairman of the AAGP Board of Directors, will be the luncheon speaker.

For the afternoon session, the audience will be divided into three groups. Each group will spend an hour with each of the three scientific speakers in round-table discussions.

No registration fee will be charged. Physicians are cordially invited to the scientific sessions, luncheon, and reception following the meeting.

Committees Appointed

President John C. Longest has appointed M. A. G. P. committees for the following year. Chairmen of the major committees are: A. T. Tatum, Petal, Executive and Nominating; Nelson O. Tyrone, Prentiss, Membership and Credentials; Louis F. Rittelmeyer, Jackson, Education; Maury M. McRae, Corinth, Hospitals; W. M. Wood, Carthage, Legislation and Public Policy; and W. E. Lotterhos, Jackson, Publication.

Committee chairmen for next year's Annual Assembly are: W. E. Lotterhos, Program; Ben N. Walker, Jackson, Scientific Exhibits; and Almas G. Ross, Jackson, Scientific Exhibits; and Albert L. Gore, Jackson, Local Arrangements.

M.U.S.E. Committee

The AAGP Board of Directors has appointed a new committee to discuss educational needs for general practitioners in the future. It is called the Committee on Minimum Uniform Standard in Education for General Practice (M.U.S.E. Committee). It will hold a meeting in Kansas City on November 10 and 9 to discuss undergraduate, internship, residency and postgraduate training standards. Among the topics for consideration is the formation of an American Board of General Practice (or General Medicine). The Committee is composed of Dr. Holland T. Jackson of Texas, chairman; Jack DeTar of Michigan; D. Wilson McKinlay of the state of Washington; Mary Elizabeth Johnston of Virginia; Wm. J. Shaw, Missouri; Jesse D. Rising, Kansas; and L. F. Rittelmeyer of Mississippi.

March 24 - 27, 1958

It is not too early to start planning for the American Academy's Tenth Anniversary Meeting in Dallas. A hotel reservations form is on page 211 of the October issue of the *Journal G. P.*

Medical School Miscellany

Although the University Hospital would always like to say "yes" to requests for indigent patient admissions, it sometimes has to say "no."

Why these refusals can't be avoided is explained in a new University Hospital Admissions Policies leaflet mailed to state physicians in October.

The new leaflet sets forth revised procedures for admitting both private and service patients to the University Hospital, outlines rate changes and includes an expanded outpatient clinics schedule.

In issuing the new leaflet, Dr. David B. Wilson, hospital director, thanks referring physicians for the understanding and cooperation they have shown during the two-year-old hospital's formative period and reviews some of the problems concerning indigent sick care at the University.

"We have only 30 house beds for white and 30 house beds for colored patients on the medical service and the same number of each on the surgical service," he says, "so there are always many, many more requests for admission of indigent patients than we can handle."

The University Hospital's prime function is teaching, its director goes on. "If we allow a service to become populated by patients with incurable disease and domiciliary problems, the teaching value falls below the level required to maintain accreditation for the school."

That's why, Dr. Wilson adds, advance arrangements for service patient admission must be made by letter, or by telephone in emergencies.

Arrangements for hospitalization of a patient in one of the three private nursing units can be made by writing or calling the University Hospital Admitting Office, the admissions policies leaflet states.

Defining an acceptable service patient as one whose treatment can be initiated or completed and who can be discharged back to his local physician or hospital for followup and convalescent care after the maximum has been accomplished at the University, the leaflet re-emphasizes that admission is by appointment. Referring physicians are asked to make arrangements with the admitting resident on the appropriate service and are informed that elective service cases pay a deposit based upon the individual patient's financial status and the estimated number of days he will be in the hospital.

Only the medical indigent are eligible for care in the Outpatient Department, the leaflet states. They are seen by appointment only and pay a small charge except in cases when even a token payment is beyond the patient's resources.

Pre-Med Visitors

OF THE HEART AN
NT OF SURGERY AND
NIVERSITY OF MISSISSIPPI

These two State College men and Millsaps girl were among the 231 pre-med students from 11 schools who visited the University Medical Center on Pre-Med Day October 10. Here they pause to view a surgery exhibit at the Center.

The fact that they've already begun learning to be doctors was brought home to a couple hundred Mississippi pre-med students at the University Medical Center in October.

The first UMC Pre-Med Day, sponsored jointly by the University Admissions Committee and state Pre-Med Advisers, brought 231 students from 11 colleges to the Medical Center in Jackson on October 10.

Would-be doctors from Mississippi College, Mississippi Southern College, Mississippi State College, Millsaps, Ole Miss, William Carey, Holmes Junior College, Mississippi State College for Women, Belhaven, Delta State College and East Central Junior College participated in the one-day event.

Planned as an annual program, Pre-Med Day is aimed at stimulating top students to choose medicine as a career and to help pre-medical students recognize the connection between basic knowledge and the reality of treating sick people. Exhibits and demonstrations at the Medical Center were selected to show the visiting students why the work they are doing at the undergraduate level is an essential part of their medical education.

Medical Center freshmen, just off the various college campuses, guided the pre-med students through during the tour.

News and Comment

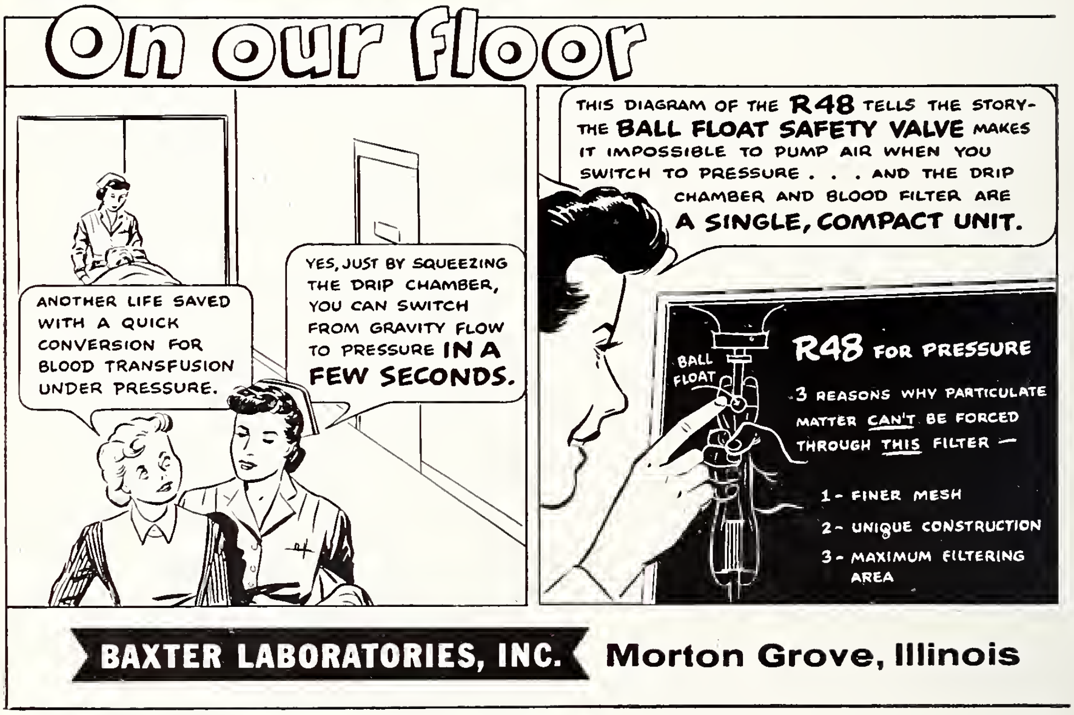
DR. CULPEPPER

Dr. Culpepper

A Mississippian both by birth and education, Dr. Culpepper was born at Gloster, Mississippi, August 2, 1897. His father was a noted Baptist minister. He attended preparatory and high schools at Poplarville and Newton, Mississippi. His college work was begun at Clarke Memorial College in 1914 in Newton and continued at the University of Mississippi where he graduated with the degree of Bachelor of Science in 1922 which included two years of his medical school curriculum. He finished his last two years of medical study at Tulane University School of Medicine, New Orleans, taking his Doctor of Medicine degree in 1924.

Dr. Culpepper entered the practice of medicine at Lumberton, Mississippi, immediately after his graduation and showed an early interest in medical society organizations by immediately joining the South Mississippi Medical Society and the Mississippi State Medical Association. In 1925 he moved to Hattiesburg, Mississippi, his present home, where he assumed the duties of House Surgeon of the South Mississippi Infirmary.

Another important milestone came in Dr. Culpepper's life when in 1929 he was married to Miss Mildred Fairley of Hattiesburg. They have one son, John Pettis Culpepper III, now a sophomore medical student at Tulane University School of Medicine.

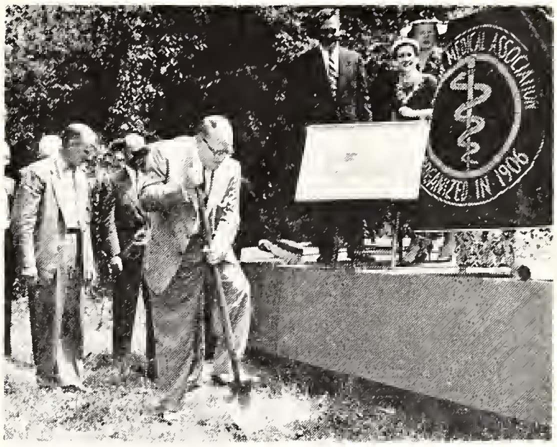

On our floor
ANOTHER LIFE SAVED WITH A QUICK CONVERSION FOR BLOOD TRANSFUSION UNDER PRESSURE.
YES, JUST BY SQUEEZING THE DRIP CHAMBER, YOU CAN SWITCH FROM GRAVITY FLOW TO PRESSURE IN A FEW SECONDS.
THIS DIAGRAM OF THE R48 TELLS THE STORY-THE BALL FLOAT SAFETY VALVE MAKES IT IMPOSSIBLE TO PUMP AIR WHEN YOU SWITCH TO PRESSURE . . . AND THE DRIP CHAMBER AND BLOOD FILTER ARE A SINGLE, COMPACT UNIT.
BALL FLOAT
R48 FOR PRESSURE
3 REASONS WHY PARTICULATE MATTER CAN'T BE FORCED THROUGH THIS FILTER —
1 - FINER MESH
2 - UNIQUE CONSTRUCTION
3 - MAXIMUM FILTERING AREA
BAXTER LABORATORIES, INC. Morton Grove, Illinois

Dr. Culpepper began his practice at Hattiesburg in 1930 and has remained there since that time.

His medical society affiliations include membership in the South Mississippi Medical Society of which he is a past-president, the Mississippi State Medical Association, the Southeastern Surgical Congress of which he is a council member, the International College of Surgeons, American Medical Association, and the Southern Medical Association.

Despite a busy professional life, Dr. Culpepper has found time to serve many civic and non-professional organizations. He is a past-president of the Kiwanis Club of Hattiesburg, a past-president of the Hattiesburg Civic Association, a past-president and King of the Krewe of Zeus, and a past member of the State Board of Health of Mississippi. He is presently a member of the medical advisory board of Sears Roebuck and Co.

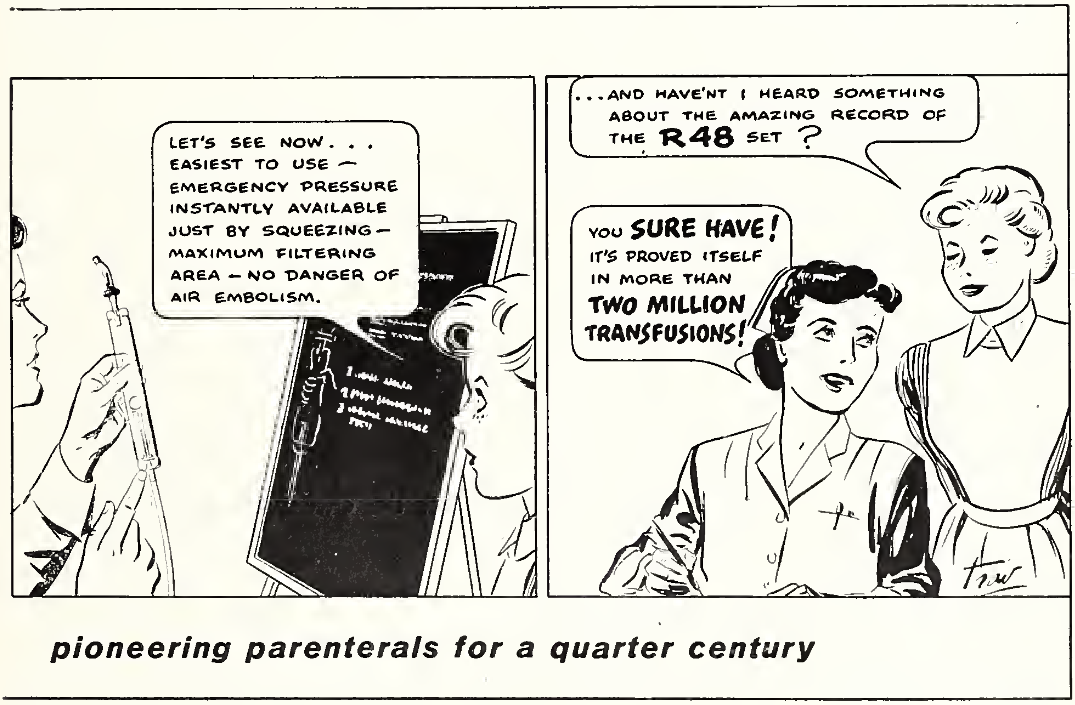
Dr. Culpepper, a Baptist, like his father, is an active deacon in the First Baptist Church of Hattiesburg.


MEDICAL ASSOCIATION
ORGANIZED IN 1906

SOUTHERN MEDICAL ASSOCIATION HOLDS GROUND-BREAKING CEREMONY IN BIRMINGHAM

The first step in the construction of the Association's $225,000 headquarters office building took place in Birmingham on August 4, when the traditional ground-breaking ceremony was held at the building site. Located on a nearly one acre plot at Highland Avenue and Niazuma on the Southside, the modern structure will symbolize the beginning of the second half-century of the Association's progress. Dr. J. F. Lucas, Greenwood, SMA Councilor from Mississippi, assisted with the spadework.

The program, presided over by Dr. J. P. Culpepper, Jr., Hattiesburg, Mississippi, president, included addresses by Dr. Robert C. Berson, dean, Medical College of Alabama; Dr. R. L. Sanders, trustee, Memphis, Tennessee; Dr. Lee F. Turlington, chairman of the Home Building Com-


LET'S SEE NOW. . . EASIEST TO USE — EMERGENCY PRESSURE INSTANTLY AVAILABLE JUST BY SQUEEZING — MAXIMUM FILTERING AREA — NO DANGER OF AIR EMBOLISM.
. . . AND HAVE'NT I HEARD SOMETHING ABOUT THE AMAZING RECORD OF THE R48 SET ?
YOU SURE HAVE! IT'S PROVED ITSELF IN MORE THAN TWO MILLION TRANSFUSIONS!
pioneering parenterals for a quarter century

mittee, Birmingham; Dr. A. Clayton McCarty, chairman of the Council, Louisville, Kentucky, and Mr. C. P. Loranz, adviser and professional relations counselor and secretary of the Home Building Finance Committee of the Association. Greetings from the Woman's Auxiliary were extended by Mrs. John M. Chenault, Decatur, Alabama, councilor from Alabama and Mrs. Walker L. Curtis, Atlanta, president-elect of the Auxiliary. The invocation was delivered by Dr. John H. Buchanan, former distinguished pastor of Southside Baptist Church, Birmingham.

UNIVERSITY OF TENNESSEE NEWS NOTES

Dr. James W. Culbertson, professor of medicine and director of the Cardiovascular Research Laboratories at the State University of Iowa College of Medicine since 1949, will join the staff of the University as professor of medicine.

Dr. I. Frank Tullis, chief of the division of medicine at U-T, said the appointment of Dr. Culbertson, effective next spring, will strengthen an already effective program in diseases of the heart and blood vessels, including both treatment and research phases.

Dr. Culbertson received his bachelor of science degree from Furman University, his master of arts degree from the University of North Carolina and his doctor of medicine degree from the University of Virginia.

* * * *

Dr. William H. L. Dornette, assistant professor of anesthesiology at the University of California Medical Center, Los Angeles, will become professor of anesthesiology and head of the department, effective January 1.

Dr. Dornette received his doctor of medicine degree from the University of Cincinnati, and interned at Christ Hospital there. He took his residency in anesthesiology at Georgetown University Medical Center in Washington. He is a diplomate of the American Board of Anesthesiology.

Dr. Dornette is married and has two children.

* * * *

Dr. Alvin J. Cummins, associate professor of medicine, has been elected to membership in the Central Society for Clinical Research.

Membership in the society is limited to individuals who have earned recognition in the field of clinical research and whose investigative work is of the highest caliber.

Dr. Cummins, who has conducted numerous studies on the gastro-intestinal tract, became a member of the University's staff three years ago.

Dr. G. Daniel Copeland, member of the resident staff of the City of Memphis Hospitals since 1955, has been appointed Frank W. Dugan fellow in cardiology.

The $1,000 fellowship was provided by the late Mrs. Anna R. Dugan, who gave $20,000 to the University to support a fellowship for a graduate of the college interested in the study of cardiovascular (heart and blood vessels) disease.

Dr. Copeland, of Senatobia, Miss., was graduated from the University of Mississippi and Harvard Medical School. He will take part in several cardiovascular research problems in the Department of Medicine.

THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

The twenty-first annual meeting of The New Orleans Graduate Medical Assembly will be held March 3, 4, 5 and 6, 1958, headquarters at the Roosevelt Hotel.

Eighteen outstanding guest speakers will participate and their presentations will be of interest to both specialists and general practitioners. The program will include fifty-four informative discussions on many topics of current medical interest, in addition to clinicopathologic conferences, symposia, medical motion pictures, round-table luncheons and technical exhibits.

The Assembly has been officially approved for Category I by the Commission on Education of the American Academy of General Practice. Thirty hours of formal credit will be allowed for attendance at this meeting.

Following the meeting in New Orleans, arrangements have been made for a postclinical tour to Mexico City, Cuernavaca, Taxco and Acapulco, leaving from New Orleans on Friday, March 7, and returning on Tuesday, March 18.

Details of the New Orleans meeting and the postclinical tour are available at the office of the Assembly, Room 103, 1430 Tulane Avenue, New Orleans 12, Louisiana.

ANNOUNCEMENTS

Dr. Neal Owens announces the association of Dr. Robert J. Meade in the practice of plastic and reconstructive surgery as of October 1, 1957. Thereafter the Owens Clinic will be known as The Owens-Meade Clinic, New Orleans, La.

The Ballenger-McDonald Urology Clinic announces the removal of its offices to the Peachtree-Baker Building, 275 Peachtree Street, N. E., Ivy Street Entrance — 272 Ivy Street, N. E., Atlanta, Ga.

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $3.00.

Published monthly at 104 Hospitality Street, Booneville, Mississippi. Return postage guaranteed.

W. H. ANDERSON, M.D. ....Editor-in-Chief
MILDRED P. ANDERSON ....Assistant Editor

MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY

C. W. Patterson, M.D. ....President
Rosedale, Miss.
J. Max Roy, M.D. ....President-elect
Forrest City, Ark.
C. L. Chumley, M.D. ....Vice-President
Nashville, Tenn.
Lan E. Reed, M.D. ....Vice-President
Hot Springs, Ark.
R. B. Cunningham, M.D. ....Vice-President
Booneville, Miss.
Thurmon Crawford, M.D. ....Secretary-Treasurer
Memphis, Tenn.

Mid-South Associate Editors

H. King Wade, M.D. ....Hot Springs, Ark.
R. L. Sanders, M.D. ....Memphis, Tenn.
Frank M. Acree, M.D. ....Greenville, Miss.

MISSISSIPPI STATE MEDICAL ASSOCIATION

Howard A. Nelson, M.D. ....Greenwood
President
Guy T. Vise, M.D. ....Meridian
President-elect
Geo. W. Twente, M.D. ....Jackson
Secretary
Rowland B. Kennedy ....Jackson
Executive Secretary

State Associate Editors

Louis F. Rittelmeyer, M.D. ....Jackson, Miss.
John T. Bryan, M.D. ....Meridian, Miss.

The Publication Committee is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.

Address all material for publication to W. H. Anderson, M.D., 104 Hospitality Street, Booneville, Mississippi.

AN APPEAL TO ONE DOCTOR

This message was written for just one person. He is a physician, practices in Mississippi, is a member of the MSMA and a leader in his community. Could that be you? If so, please read on—maybe it is you, and your help is needed.

An editorial in the *State Times* of Jackson said this on September 28, 1957: "The endorsement by the state medical association of a proposed law to end 'quickie marriages' encourages those of us ashamed of Mississippi's rotten record as a spawning ground of family distress. By all means the state's loose marriage laws which enrich unscrupulous justices of the peace and circuit clerks at the expense of humanity should be tightened. Only the most callous could oppose the bill authored by Rep. John Kennedy of Marshall County to clean up the state's reputation by putting an end to the injustices of diseased, under-age, spur-of-the-moment marriages."

Those are strong words, but they ring true. And they reflect the official opinion of your state association. In a public statement, Dr. Howard A. Nelson, MSMA president, said that the Council "voted unanimously to assume this position because of the compelling necessity for immediate adoption of this urgently needed legislation. Moral, social and health implications in this issue are such as to command the attention of every conscientious, thinking Mississippian."

The medical profession now has joined 45 other state-wide groups in demanding the passage of adequate legislation for the abolition of "marriage-mills." At its recent meeting, the Mississippi Academy of General Practice unanimously endorsed the MSMA position. It must surely be true that every one of us stands united for a law that will protect the innocent and slow down the impulsive as well as provide for the detection of the disease.

The bill that will be introduced to the legislature by Rep. Kennedy provides for a waiting period, blood test for syphilis and penalties for public officials who violate the law. A similar bill, offered to the 1956 legislature, was literally mutilated: the unenforceable waiting period already on the statute books was reduced from 5 days to 3 days and the blood test was voted down. This has been the pattern for 42 years, since the first attempt to strengthen the state's marriage laws was made. It also served notice on the people: no blood test means no enforcement.

The *State Times* editorial concludes: "Perhaps at the next session, in spite of the badgering of those border county marriage officials who blacken the name of Mississippi, the legislature will heed the public will. Only so will the 'quickie' blot get the swift and permanent removal it needs from the record of our state."

But will the legislature heed the public will? Maybe it will . . . maybe it would have done so 42 years ago, and in 1956. Maybe — but it didn't! This is the point! That is why this appeal to one doctor is necessary. And, by the way — if you've read this far, there's no doubt about it — this message is for you!

Yes, if you will talk to your state senator and representative and tell him your views, the blot of quickie marriages can be erased from our collective conscience. Your influence, the influence of just one doctor, can make it happen. Will you do it, doctor?

Louis F. Rittelmeyer, Jr., M.D.

HEADS MSHA

Dr. Dave Wilson administrator of our University Teaching Hospital in Jackson, is the new president of the Mississippi State Hospital Association. A doctor of medicine, he is well qualified in other ways for a hospital administrator. His enthusiastic rapport with all members of the profession and hospital administration augurs a successful year. Indeed, the very best understanding and close cooperation between the medical profession and the hospital administrator and the hospital board of trustees is essential. Medical progress has been marvelous, hospital service has improved over and over, but evenso medical economy has room for improvement. The relation of medical service to the whole life of our people needs to be kept in mind. Voluntary insurance is our present greatest hope for continued medical economic progress. People are not satisfied without the best hospital service. They want insurance that will pay the entire expense. It is hard to find a single company that will do this. Some more resourceful economists take out insurance in a number of companies, and herein have discovered a fertile source of income. Fire insurance companies insure a house for a stated amount regardless of how many policies are written. Companies insuring against illness do not seem to take this view. We have always thought life insurance was for protection. Insurance against illness should be in like manner for protection and not for investment.

Dr. Wilson, an able, well-educated native Mississippian, can approach these problems from the standpoint of the hospital, the doctor, and the sick person. His opportunity to render service is great. We congratulate him and the Hospital Association.

NEW CLASS

Speaking of family physicians, we know one practitioner who delivered a girl baby, and later delivered 12 children for her. You may say this is a rare circumstance. But last week we had a comparatively young doctor who delivered the tenth baby for one mother. He had delivered all of them, 9 boys and the last a girl, no anesthesia with any of them. Let us suggest that our medical school call a class of mothers and let them start a training school for expectant mothers, on how to deliver their babies without so manysupports. This will come, and it will be a big boon to human society.

SMA IN MIAMI BEACH

The Southern Medical is holding its annual session in Miami Beach November 11-14. Mississippi is honored with the presidency this year, the sixth time Mississippi has been honored with the presidency of this great medical organization of the South. The late Dr. W. W. Crawford of Hattiesburg was one of the founders and the first president from Mississippi. Then came the late Dr. W. S. Leathers, dean of our two-year medical school. Then followed Dr. Felix J. Underwood, nationally known public health executive, and Dr. Harvey F. Garrison, Sr., who might well be called the father of pediatrics in Mississippi. This year Dr. J. P. Culpepper of Hattiesburg is the SMA president. At one time Dr. Crawford and Dr. Culpepper, both having attained the SMA presidency, were associated in practice in Hattiesburg, where in 1915 Dr. Rudolph Matas delivered his immortal "Soul of the Surgeon" before the Mississippi State Medical Association.

SEVENTY YEARS AGO

In 1886 Dr. W. A. Evans of Aberdeen was voted into membership of the Mississippi State Medical Association. He died at the age of 84, one of the most distinguished members ever on the rolls of the state medical association. A very close and devoted friend of Dr. Evans was Dr. G. S. Bryan of Amory. They were kindred spirits in their desire for medical knowledge.

BOONEVILLE NURSING HOME

The policy of this excellent nursing home is to meet the individual needs of the sick and aged, to give the best care to the sick, aged, and convalescent.

We are also prepared to care for surgical patients, invalids, and patients requiring special diet.

Pleasant surroundings — television — furnace heat — air conditioning — picinc grounds.

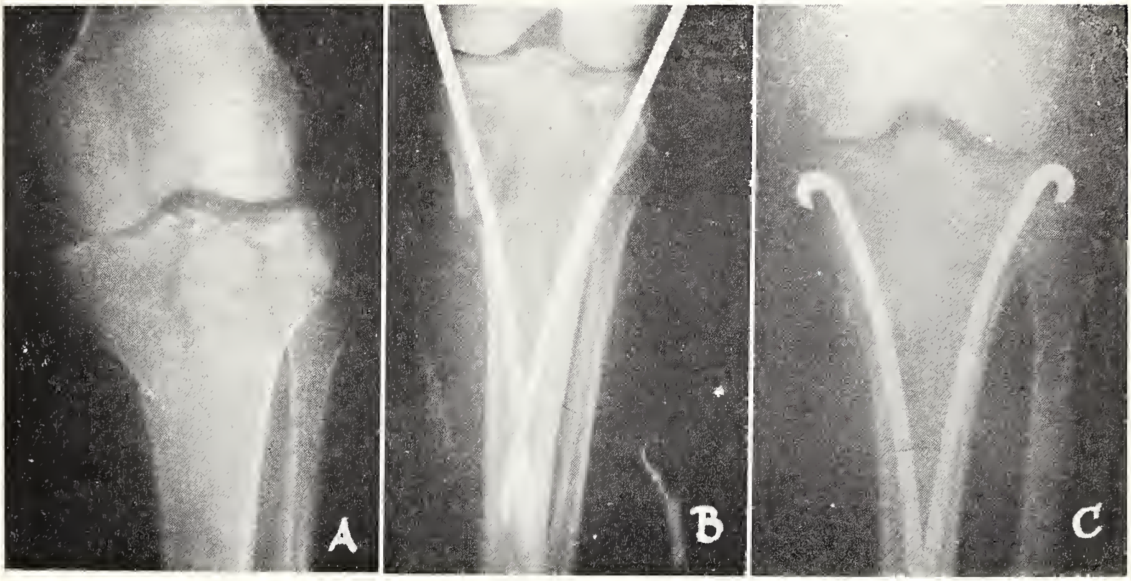
BOONEVILLE NURSING HOME
Ozelle Mullinix, Operator
PArk 8-5929 302 Bridge Street
Booneville, Mississippi

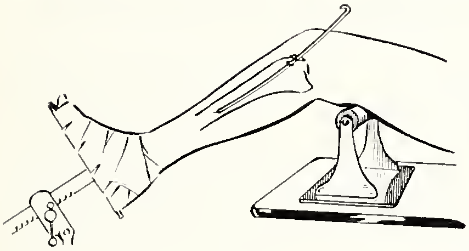
FRACTURE PROBLEMS

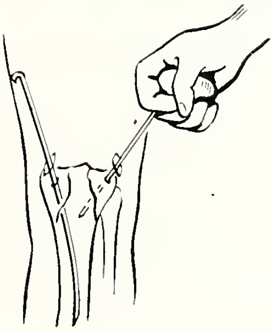
Leslie V. Rush, M.D.
Meridian, Miss.

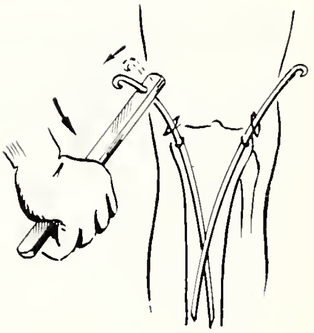
No. 7 of a series

CRUSH FRACTURE TIBIAL CONDYLES





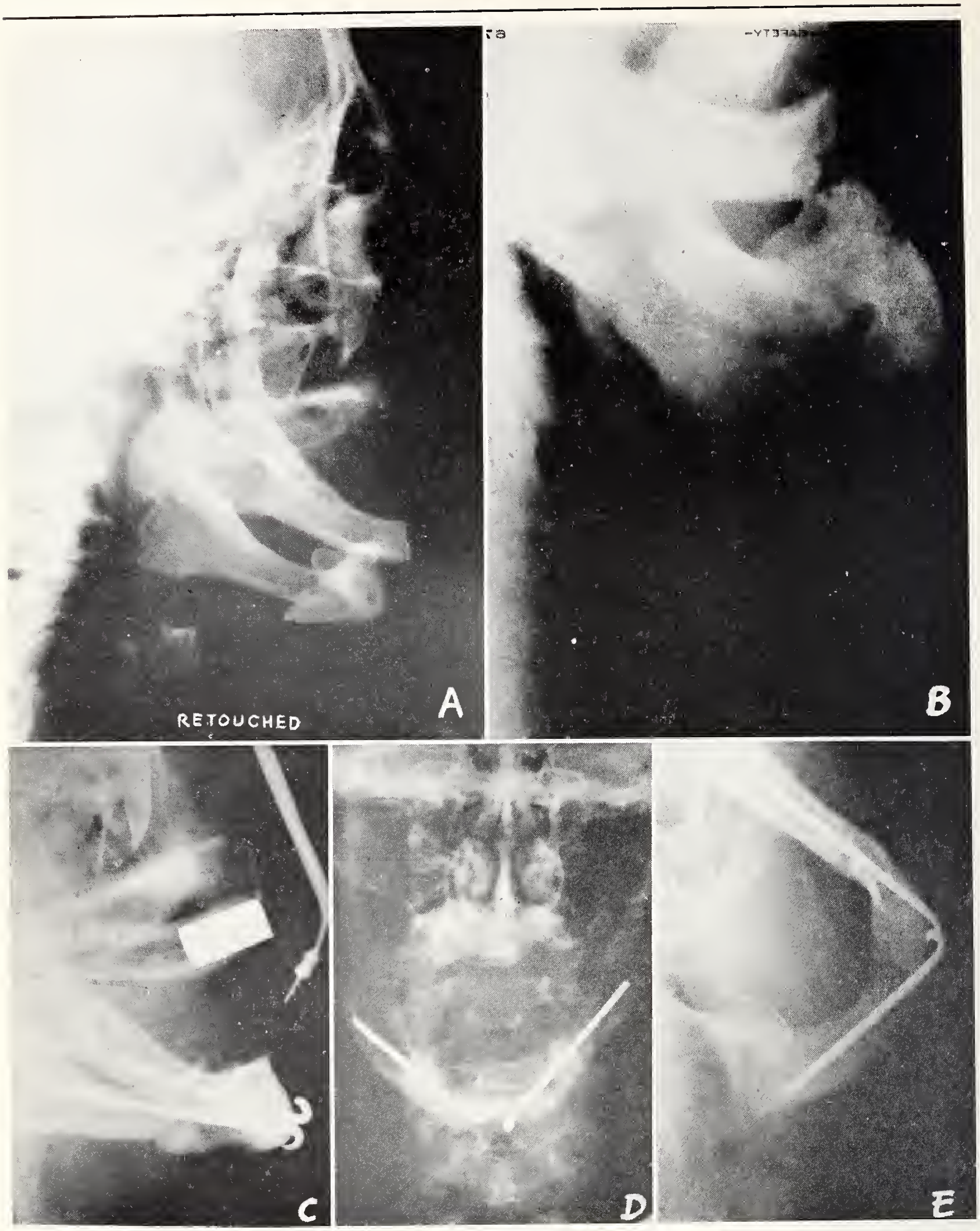




A. Female, age 53. AP view on admission. Note widening of the plateau and depression of medial condyle with oblique fractures both condyles.

B. Check-up films in surgery. Closed double pinning through small stab wounds over the medial and lateral articular margins of the bone. The pins are straight and driven simultaneously. Note that at this stage fractures are compressed above and somewhat distracted below due to three-point-pressure of the pins.

C. Check-up at 2 months. Lateral plaster splits were worn for 6 weeks with occasional removal for exercise. Almost full function at 2 months.

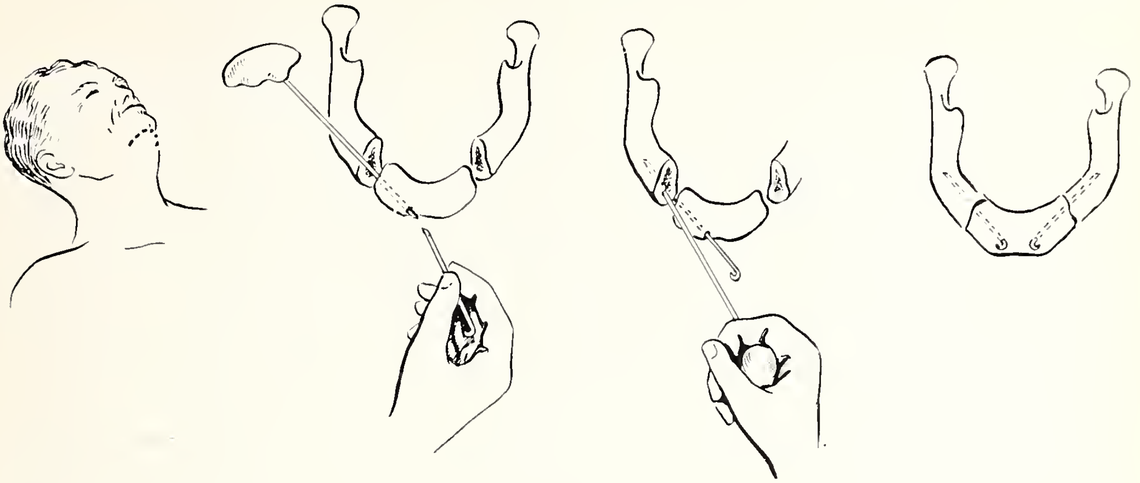


BILATERAL FRACTURES OF EDENTULOUS JAW

A & B. Male, age 65. On admission.

C. Lateral view after double pinning.

D & E. Ultimate result at ten months.

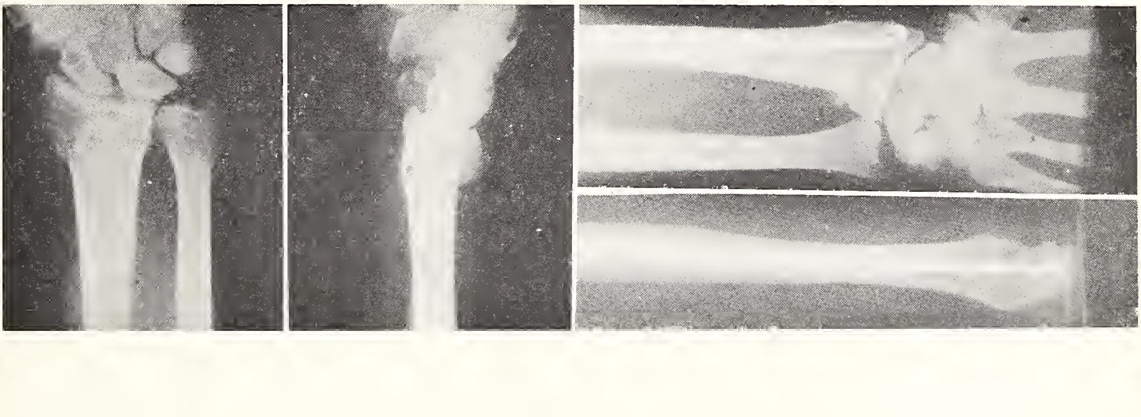


TECHNIC DOUBLE JAW FRACTURES

Minimal exposure of the fracture area and the inferior portion of the anterior segment exposed. The anterior fragment was attacked first on the right side. With the 1/8" awl-reamer an oblique canal was made near the inferior margin so that the point emerged near the symphysis. A 3/32 inch pin of proper length was passed through this opening and driven to the fracture line.

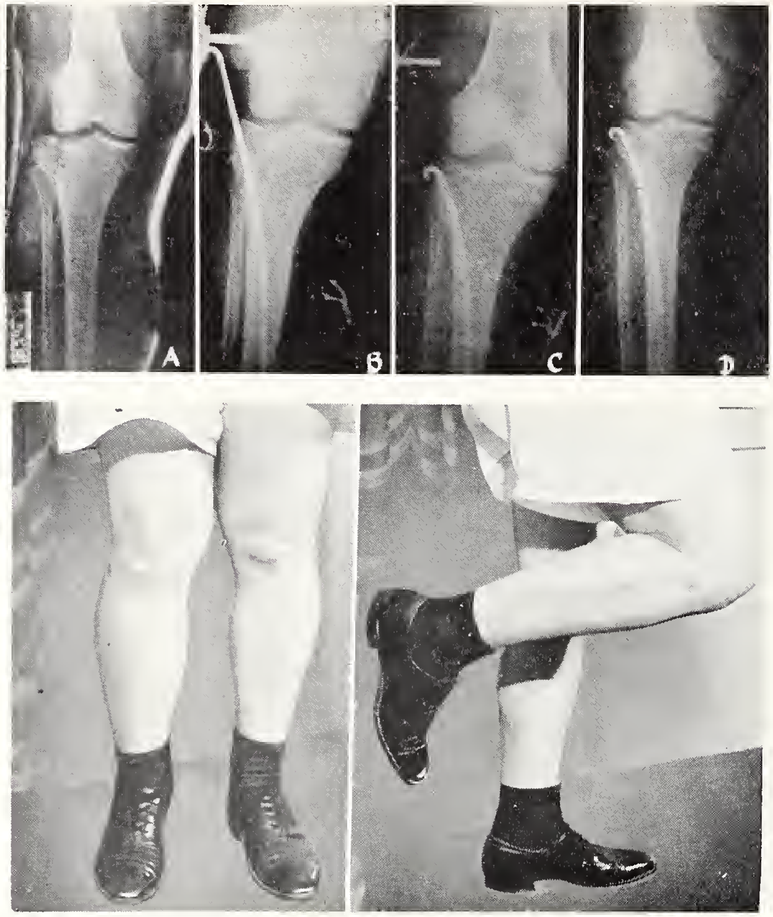
A small axial opening was made with the awl-reamer in the posterior fragment making an effort to avoid the inferior dental canal. The fracture was re-aligned and the pin driven a short distance into the posterior fragment to transfix the fracture.

A similar procedure was repeated on the left side and then both pins were driven completely home. Fixation was surprisingly stable.



ASSOCIATED COLLES' FRACTURE

Treated by closed pinning using 3/32 inch pin. Fixation was stable. No external immobilization. Patient had secured full function 2 days after surgery.



COMPRESSION FRACTURE EXTERNAL CONDYLE TIBIA

A. Preoperative film. Male, age 57. Note depressed articular surface and vertical fracture of external condyle with marked widening.

B. Check-up in surgery. Closed pinning (straight pin 3/16 inch diameter). Note that the pin gliding down the shaft has been forced into a curve exerting three-point pressure, resulting in firm compression of the fracture surface.

C. Check-up film in surgery. Head of the pin has been slightly stress-relieved and driven home.

D. Check-up film 6 weeks after surgery showed good healing.

Below: Motion at 6 weeks. The knee was immobilized with plaster splints for 10 days. Was completely stable after pinning. Full weight bearing permitted at 6 weeks and at that time patient had full function.

Office Diagnosis of Endocrine Disorders*

H. G. LANGFORD, and J. R. SNAVELY†
Jackson, Miss.

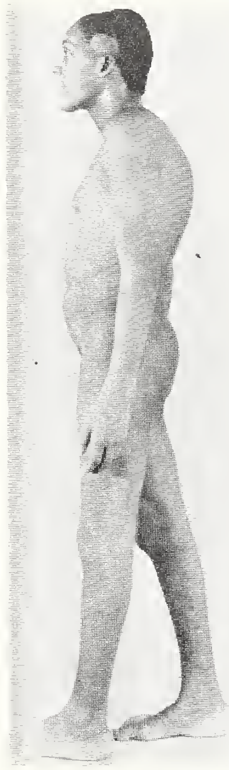
The practicing physician will see many patients who have some point of history or physical examination that will raise the possibility of an endocrine disease. Most of these patients will not have such an abnormality, but a few will have some endocrine disease which could be diagnosed and effectively treated. One approach to this problem would be to run all possible tests on such patients or refer them to some center where those tests could be run. This is frequently financially impossible and certainly is undesirable as a routine approach to patient care. The purpose of this paper is to outline certain simple clinical procedures which are available to the practicing physician and which can answer many of these problems. The response of the patient's own tissue, the original reason for suspecting the endocrine abnormality, will often furnish a good guide to the amount of hormone being produced. To be sure, certain patients will require the studies of a medical center to be accurately diagnosed, but we feel that the suggestions which are to be outlined will serve as an effective screening method.

Acromegaly

Acromegaly is a good example with which to illustrate our thesis. This disease is due to overproduction of growth hormone by the pituitary. Therefore, analysis of the serum or urine for its concentration of growth hormone should enable us to make the diagnosis. At the moment, there is no really reliable clinical assay for growth hormone,[1] therefore, we turn to clinical evaluation, not as an alternative method, but as the preferred approach.

This diagnosis will have been suggested by the ape-like appearance, large hands, feet, ears, nose, and jaws of the patient. Most patients, however, who present this conglomeration of changes from the norm do not have acromegaly, but merely have big extremities and protruding jaw due to hereditary factors. Several simple maneuvers are available to make this differentiation between disease and normal variations. First have the patient bring in an old photograph, then compare the appearance of the nose, jaws, and ears in the photograph with the patient directly in front of you. Any change will then become quite apparent. Next, look at the teeth. As the jaw of the patient with acromegaly has continued to grow since puberty and his number of teeth have not increased, the spaces between the teeth usually will be abnormally wide. Also, ask the patient about change in hat, glove, and shoe size. We have found this the least useful of the maneuvers, as it seems in this area patients frequently do not know their hat size, rarely wear gloves, and many men and most women think that their feet have continued to increase in size since attaining full height though they manifestly do not have pituitary disease. And lastly, because, this disease is due to overgrowth of the pituitary, most of these patients will have defects in their visual fields which can be easily demonstrated by the confrontation method and will have ballooning of the sella turcica on skull x-ray.

The following case illustrates some of these points:



W. J. H., a 25-year-old colored man, was in good health until the age of 22. At this time he noted the progressive enlargement of his jaw, feet, and hands. His shoe size increased from 10 to 13. He noticed the onset of severe bitemporal headaches, and gave a vague history of visual difficulty which he could not describe further. His main symptom, however, was severe bronchial asthma.

---

*University of Mississippi Medical School.

On examination he was slightly stooped. His ears and nose were large. The supraorbital ridges and lower jaw were quite prominent. His hands were large, with especial enlargement of the proximal interphalangeal joints. The feet were broad and long, resembling those of a bear. There was marked contraction of his visual fields, both to confrontation and by the ophthalmologist's more refined studies.

Comment: This patient is especially interesting, in that his competent physicians did not note these changes until the diagnosis was suspected bý a sophomore medical student, who was assigned the patient while taking physical diagnosis. The alteration in his appearance probably occurred gradually while they wrestled with the severe problems presented by his asthma. A fresh, bright, though relatively untrained, eye was needed to see the alterations produced by excess growth hormone, and shown in Figure 1.

Panhypopituitrism

Next to diabetes and thyroid disease, probably the most frequent endocrine disease is panhypopituitrism. A full discussion of this syndrome may occupy half of a textbook of endocrinology, for the pituitary controls the function of the thyroid, the adrenals, the gonads, and secondarily, the pancreas. Therefore, innumerable studies may be done to demonstrate all these abnormalities. The most sensitive assay of all is easily available, however, to the clinician. When the pituitary is destroyed the first functions that disappear are the gonadotrophic; the next are the thyrotropic, and as a rule the last are the adrenocorticotrophic.

Therefore, in the male, libido will disappear quite early, and this will be followed by testicular and prostatic atrophy. The female in the reproductive years will become amenorrheic. There are very rare patients in which this sequence does not occur, and some of the other glands under pituitary control will become hypofunctioning first; these are definite exceptions, and most patients will lose genital function before other functions. One point of caution should be raised. Few men will complain of loss of libido. As important as a man feels this function is while he has it, apparently it is little missed or at least little discussed when gone, and the patient instead will have as an initial complaint weakness, fatigue, or some other non-specific symptom.

Of value in the diagnosis of panhypopituitarism is a knowledge of why the pituitary has been destroyed. It has now been recognized that almost 80 per cent of these cases are due to postpartum infarction of the pituitary, especially after a traumatic delivery with a great deal of blood loss.[2] When this occurs the patient is unable to nurse, as milk is not produced, and frequently will become progressively weaker after pregnancy. Menstrual periods will not be resumed and the patient may slowly lose axillary and public hair and note atrophy of the breasts. Most of the remaining cases will be due to pituitary tumors, and in these demonstration of defects in the visual fields, as noted under acromegaly, and x-ray of the skull to demonstrate abnormalities of the sella tursica may be of help. Two other clinical points should be raised in this connection. One is that a hormone from the pituitary, the melanocyte stimulating hormone, is one of the major controllers of skin pigmentation. Therefore, the patient will become unable to tan, and will be much lighter in color than previously. Skin color is not completely under this hormone's control and the colored person will remain rather dark, but lighter than formerly. And lastly, these people frequently have various types of mental disturbances and may be admitted to psychiatric care because of their difficulty.

Addison's Disease

Many patients present with the non-specific complaints, weight loss, asthenia, and hypotension that are part of the picture of Addison's disease. The physician will wish to rule this entity out as easily as possible. The first clinical hormone assay which can be done on the patient is determining his degree of pigmentation. Because in Addison's disease the pituitary is freed from the suppressing effects of hydrocortisone and therefore puts out more melanocyte-stimulating hormone than normal, the patient has increased pigmentation. This may be especially prominent over the knuckles or in a surgical scar. The patients freckles, instead of being brown, will be black. Also, in distinction to the patient who merely has a sun tan, there will be increased pigmentation of the buccal mucous menbranes.

If the suspect has a degree of pigmentation which you think may be abnormal and you wish to perform further studies to attempt to rule out this diagnosis, this next step is just as easy, and is known as the Robinson-Power-Kepler[3] test. This is based upon the fact that lack of hydrocortisone causes difficulty both in retaining water and suddenly excreting a large amount of water. The patient takes no fluid after 6 p.m. the evening preceding the test. At 10 p. m. the patient voids and the urine is discarded. All urine is saved from then until 7 a.m. at which time he voids again. The patient then drinks 20 cc water per Kg body weight (1400 cc for a 150 pound patient). Hourly urine specimens are obtained until 11 a. m. and the volume of each recorded. If any one of the hourly specimens exceeds in volume the 7 a.m. specimen, Addison's disease may be excluded with some certainty. However, the opposite is not true, for congestive failure, renal disease, cirrhosis and sprue will also cause delayed excretion of water.

By observation of pigmentation and this test, however, most false suspects can be eliminated. Those not eliminated by these tests then deserve more searching studies to rule out Addison's disease.

Hypothyroidism

Hypothyroidism ranks high among diseases suspected best at the first glance. The impassive, slightly puffy, rounded face with dry skin and disappearing eyebrows is dramatic at first glance, but by the second or third visit the impact of these abnormalities will have disappeared. In figure 2, a patient recently seen at the University Hospital, the face shows the apathy puffiness, and lack of expression common to this syndrome. The dryness of hair and skin, sensitivity to cold, and lack of unusual sweating are not diagnostic but are very suggestive. Thinning of the lateral margins of the eyebrows is a quite characteristic finding.

The one finding which we have come to rely upon very strongly is the tendon jerk. Contraction is normal, but the relaxation phase is markedly prolonged. This is best demonstrated by the Achilles jerk, though all reflexes will show some response. Most patients with myxedema will show this typical finding.

An illustrative case report follows:

Mrs. G. W. H., University Hospital, No. 11824, was admitted on 9/21/56 to the ward medical service, with a chief complaint of a carbuncle on her back and prolonged weakness. The exact date of the onset of her illness could not be determined. Twenty-eight years before her admission an area of depigmentation had started on her right hand. Twenty-two years before admission she noticed weakness especially in the legs. Her skin continued to get dryer and the areas of depigmentation to progress. Five years before admission she was placed on a small dose of thyroid, the exact amount not being known. Three years before admission, her weakness became much more severe to the point that she could not do her normal housework. Two years before admission, bags appeared under her eyes and her hair became much more brittle. There was no change in perspiration, bowel habits, and excessive sleepiness was absent. In fact she complained of nervousness rather than apathy. Pertinent points on physical examination were her appearance which can be seen on the attached photograph, a large carbuncle over her back, absence of any palpable thyroid tissue, and the marked slowness of relaxation of the deep tendon reflexes. Pertinent laboratory studies included a BMR of -8, a 17-Ketosteroid excretion of 1.8 ml. for 24 hours, and a radio iodine uptake of 2 per cent at the end of 24 hours; insulin glucose test was normal. The patient was put on slowly increasing doses of thyroid, and is now markedly improved on 150 ml. daily, this dosage to be increased later, as dictated by the clinical picture.

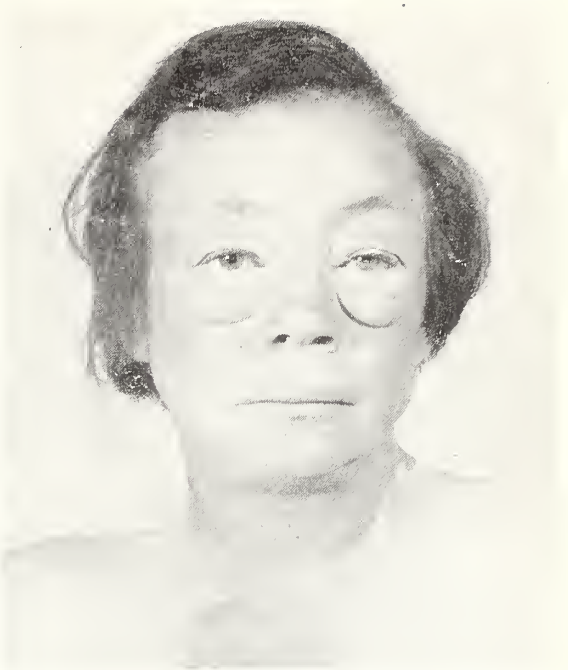


Figure 2

Comment: In this patient the most valuable means of diagnosis were her appearance and the delayed relaxation of her deep tendon reflexes. The BMR was really within normal limits. The 17-Ketosteroids on the other hand were definitely abnormal. This could be part of the picture of pituitary myxedema, but because of the normal insulin glucose tolerance test, it was felt that it was secondary to her long standing hypothyroidism rather than due to her primary disease. Radioactive iodine uptake was abnormally low. However, previous ingestion of a number of iodine-containing substances can produce an abnormally low uptake, so this alone is not adequate for diagnosis, though it is valuable in confirmation.

Conclusions: The bony and soft tissue over growth produced by acromegaly, the loss of libido consequent to pituitary destruction, the delayed excretion of water in the patient with Addison's disease, and the slowing of neuro-muscular function which is found in myxedema are all examples of how relatively specific effects of a hormone deficiency will aid in the diagnosis of endocrine disorders. These manifestations are not absolute, but serve to illustrate our thesis that careful clinical observation will, with appropriate physiological knowledge, carry one a long way in initial screening of patients with suspected endocrine disease.

REFERENCES:

1. Smith, R. W. The hypophyseal growth hormone, Nature and Actions. New York, McGraw-Hill (1955).
2. Sheehan, H. L. and Summers, G. K. Quarterly Journal of Medicine 18: 319 (1949).
3. Robinson, F. J., M. H. Power and E. J. Kepler. Two new procedures to assist in the recognition and exclusion of Addison's disease. A preliminary report. Proc. Staff Meet., Mayo Clin. 16: 577 (1941).

ANNOUNCING

The Twenty-First Annual Meeting
of

THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

Conference Headquarters — Roosevelt Hotel
March 3, 4, 5, 6, 1958
GUEST SPEAKERS

Carleton B. Chapman, M.D., Dallas, Tex.
Cardiology
Herbert Rattner, M.D., Chicago, Ill.
Dermatology
Charles A. Flood, M.D., New York, N. Y.
Gastroenterology
Robert A. Davison, M.D., Memphis, Tenn.
General Practice
Lawrence M. Randall, M.D., Rochester, Minn.
Gynecology
Bayard T. Horton, M.D., Rochester, Minn.
Internal Medicine
Perrin H. Long, M.D., Brooklyn, N. Y.
Internal Medicine
George N. Raines, Capt., MC, USN, Washington, D. C., Neuropsychiatry
Robert H. Barter, M.D., Washington, D. C.
Obstetrics
Ralph O. Rychener, M.D., Memphis, Tenn.
Ophthalmology
C. Leslie Mitchell, M.D., Detroit, Mich.
Orthopedic Surgery
Frank D. Lathrop, M.D., Boston, Mass.
Otolaryngology
Arthur H. Wells, M.D., Duluth, Minn.
Pathology
James Marvin Baty, M.D., Boston, Mass.
Pediatrics
Harold O. Peterson, M.D., Minneapolis, Minn.
Radiology
Jere W. Lord, Jr., M.D., New York, N. Y.
Surgery
Claude E. Welch, M.D., Boston, Mass.
Surgery
Ormond S. Culp, M.D., Rochester, Minn.
Urology

Lectures, symposia, clinicopathologic conferences, round-table luncheons, medical motion pictures and technical exhibits.

(All-inclusive registration fee — $20.00)

THE POSTCLINICAL TOUR TO MEXICO CITY, CUERNAVACA, TAXCO, AND ACAPULCO

For information concerning the Assembly meeting and the tour
Leaving March 7 from New Orleans and returning March 18, 1958
write, Secretary, Room 103, 1430 Tulane Avenue, New Orleans 12, La.

Fixing Fifteen Forearm Fractures*

STANLEY A. HILL, M. D.
Corinth, Mississippi

In considering broken forearm bones, the order will be from the distal to the proximal ends. Compound wounds will not be included in this discussion. Highest in frequency of any part of the body, forearm injuries interest all who do traumatic surgery.

Fractures of the Distal End of the Forearm

The several breaks of the lower end of the radius may be considered varieties of the Colles' fracture because treatment is essentially the same. Fracture of the styloid process of the radius involves the wrist, the fracture line beginning at the articular surface and angles out through the cortex on the lateral side. The radial styloid receives the insertion of the brachioradialis muscle, the pull of which must be taken into account in treatment, because of the lateral and proximal displacing effect. This is illustrated in Figure 1. This injury is managed like a Colles' fracture with emphasis on, or exaggeration of, the position of acute flexion and ulnar deviation. In this position the radiocarpal ligament holds the fragment in reduction.

Colles' fracture is often counted easy to treat. Although a common problem, it is a tricky injury and requires meticulous care in reduction and splinting. By definition it is a fracture of the distal one and one-half inches of the radius with posterior displacement and also fracture of the ulnar styloid process. One of the standard and good methods of reducing it follows. Increase the deformity, then with pressure from the operator's thumb on the distal fragment, make a firm forward flexion-like maneuver[1]. When reduced. it is splinted in flexion and ulnar deviation Moulded plaster-of-Paris sugar tongs type is efficient.

The next item in treatment is the roentgenologic evidence of good reduction. The criterion of reduction is that the posteroanterior view reveals the tip of the radial styloid to be one-half inch farther distal than the ulnar one. Sante demonstrates this by drawing a line through the middle of the shaft of the bone[2]. Then a line erected at a right angle to the axis is drawn through the tip of the radical styloid. The transverse line will contrast well the levels of the radial and ulnar styloids. (See Figure 2). In the lateral view a line is drawn along the axis of the bone. This line is intersected by a second one drawn through the anterior and posterior tips of the articular arc. The second line should be in a plane tilting forward about thirty degrees from vertical, which is illustrated in Figure 3. If the plane of this line is tilted backward, or even if it is vertical, motion

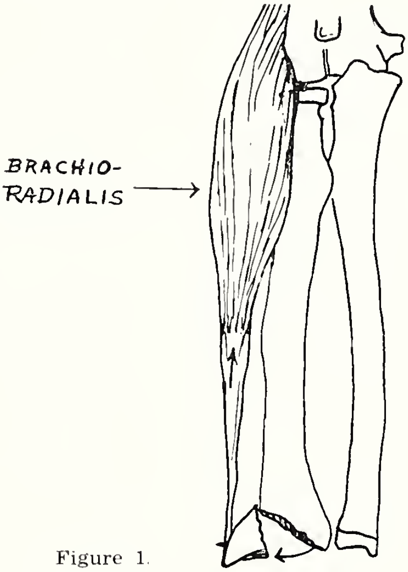


Figure 1.

FRACTURE of RADIAL STYLOID
SHOWING DISPLACING PULL
of SUPINATOR LONGUS

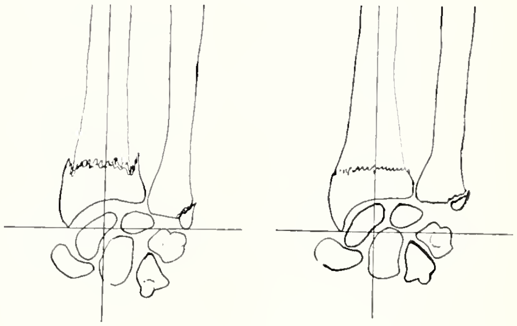

IMPACTED COLLES' FRACTURE   REDUCED COLLES' FRACTURE

Figure 2. The horizontal lines contrast the posteroanterior x-ray appearance of the abnormal with the normal levels of the styloid processes of the radius and ulna before and after the fracture has been reduced.

---

*Presented before the quarterly meeting of the Northeast Mississippi Thirteen Counties Medical Society, June 1956.

will be limited, and the grip will be weak.

The age of the patient makes a difference in the clinical problem. In childhood a typical Colles' fracture is rarely found. The counterpart is epiphyseal separation of the distal radial epiphysis. Another related injury in childhood is fracture of both forearm bones in the distal third. In young adults the typical injury is found often, and the reduction once accomplished is held securely until union is firm. In the aged comminution is more frequent, and the end result is more often poor. This sequence of events evidently had its effect in prompting Rush to advocate the use of the medullary pin in this type of injury[3].

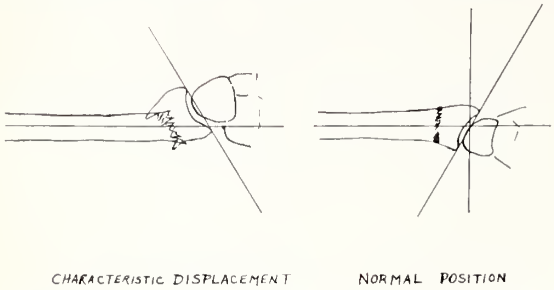


Figure 3. Lateral x-ray view of Colles' fracture before and after reduction. Note the tilt of the articular arc.

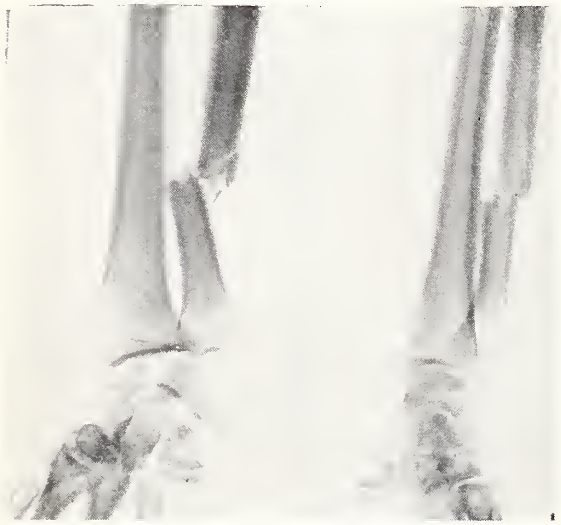


Figure 4 Fracture of the shaft of the ulna at the junction of the distal third with the middle demonstrating the displacing pull of the pronator quadratus muscle

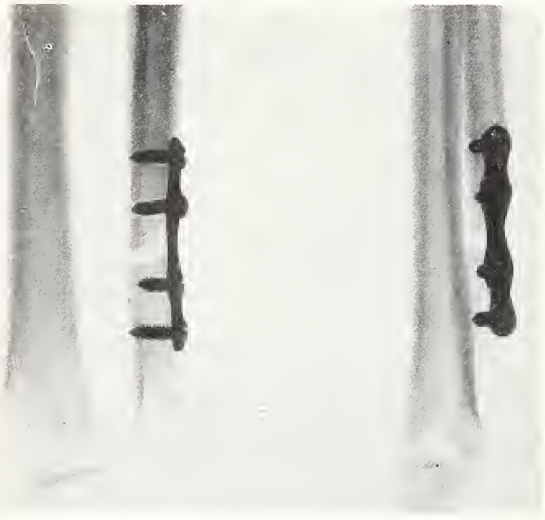


Figure 5. Same as Figure 4 after internal fixation with a four screw metal plate.

Separation of the distal radial epiphysis produces the same deformity as Colles' fracture, and the same treatment is required. Although the family should be told that the growth center has been damaged, and the ultimate contour cannot be assured, this writer has not seen a delayed deformity develop where reduction has been accurate.

A Smith fracture may be described as a reversed Colles and is quite rare. The distal fragment of the radius is displaced anteriorly. Therefore, the reduction maneuver must be altered accordingly.

Chauffeur's fracture is the broken shaft of both radius and ulna near the distal end. The name comes from the fact that the injury was caused by a "kick" from an automobile crank. The term, although of historical interest, should be revised because hand-cranked automobiles are obsolete.

Fracture of the styloid process of the ulna rarely poses a problem whether it be solitary or a part of the typical Colles' fracture. When non-union results with persistent soreness, excision is the treatment of choice.

Solitary fracture of the shaft of the ulna at the junction between the middle and distal thirds is a firm indication for open reduction and internal fixation. The action of the pronator quadratus muscle defeats closed reduction. (Figure 4). The altered action of this muscle pulls the short fragment out of alignment and toward the radius. Figure 5 shows this fracture reduced with a metal four screw Lane type plate as internal fixation.

Fractures of the Shafts of the Radius and Ulna

Traveling cephalad the challenging clinical problem of fractures of both bones of the forearms arises. Magnuson says that forearm fractures present the most complex problems of the entire skeletal system not excepting the femur[4]. Anatomy offers the fundamental approach to the efficient management of these injuries because it gives a basis for the altered mechanics encountered. The pronator teres is the accepted starting point of clinical consideration. It originates above the elbow and inserts just proximal the mid level of the shaft of the radius. If the radius is broken proximal to the insertion of the pronator teres, the short (proximal) fragment is externally rotated, and the long (distal) fragment is internally rotated. Then to complicate the situation, the short fragment is displaced anteriorly by the flexor action of the biceps. The pronator quadratus is located in the distal third, its fibers passing almost transversely from the ulna to the radius. Therefore, since the normal pronator action of this muscle is rendered abnormal by the fracture, the distal radial fragment is pulled to the ulna. This narrows the interosseous space and heaps up the complications.

Fractures of the shaft of both bones of the forearm in children yield to closed reduction and fixation in circular plaster-of-Paris splints. The splint should begin at the metacarpophalangeal joints and extend to or above the mid-level of the arm holding the elbow at a right angle and the forearm in mid supination.

In adults complete fracture of either of the radius separately or both radius and ulna are best treated by open reduction and Rush intramedullary pinning. An occasional case will be satisfactorily managed by closed reduction, but the pitfall is this. When progress x-ray films reveal that the reduction has been lost, some patients will not submit to operative correction. Careful surgical preparation of the skin should be executed, including the arm and manicure of the finger nails. Skin draping is facilitated by employing sterile stockinette tubing through which openings comparable to the skin incisions are made and fastened to the skin edges with Michel clips. Placing the forearm across the patient's chest affords a satisfactory position for operation. This places the dorsal side up and requires less rotation of the radius than a lateral arm board. Rush pins of the appropriate diameter are selected nearly as long as the bone. The radius is entered through the styloid and the ulna through the olecranon. Medullary pinning is favored over plating because the pin guides the displacing forces into impacting ones, thus favoring union. It is also easier, usually, to remove than a metal bone plate. Figure 6 illustrates the Rush pin in the radius. Both radius and ulna are broken.

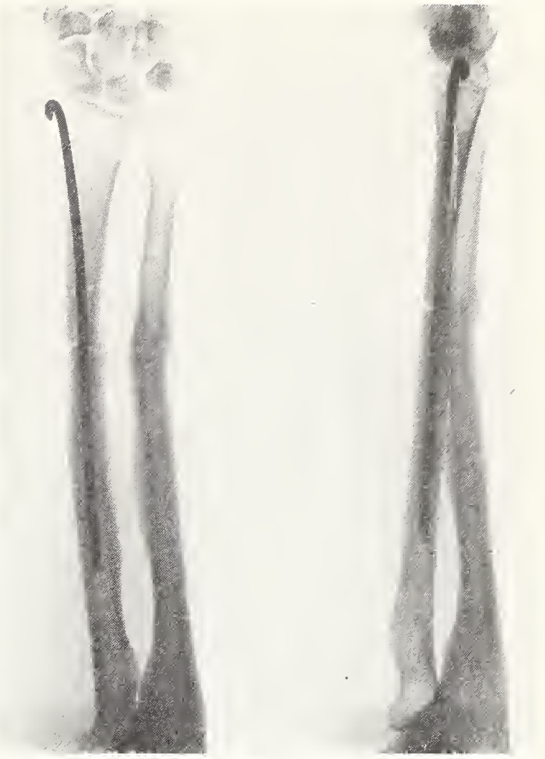


Figure 6. Fracture of the shaft of both radius and ulna with Rush medullary pin as internal fixation of the radius.

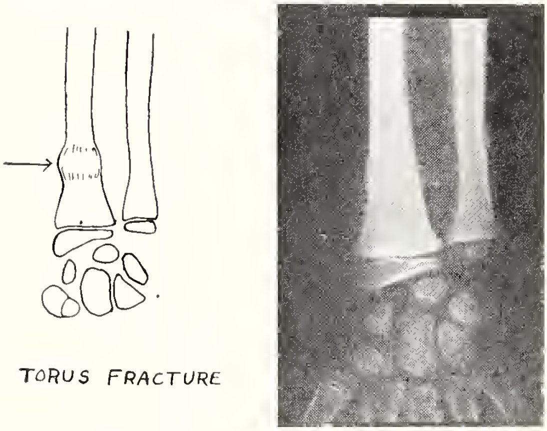


Figure 7.

The surgical approach to the shaft of either the radius or ulna is best made on the dorsal side. This keeps one farther away from most of the important blood vessels and nerves. The radial nerve perforates the supinator brevis muscle as it travels to the posterior side of the forearm and is the one large nerve trunk to be protected. To expose the shaft of the radius, a longitudinal incision of the desired length is made over the fracture site on the dorsal aspect and carried through the deep fascia. This will expose the extensor digitorum communis muscle underneath which lies the deep branch of the radial nerve distal to its aperture of perforation in the supinator brevis. The extensor carpi radialis muscle is retracted laterally. This will expose a small area of the middle third of the shaft. If there is need to expose the upper part of the shaft, the supinator brevis is cut longitudinally and retracted medially. If the distal part must be exposed, the muscles of the thumb (extensor pollicis brevis and abductor pollicis longus) are included in the retraction of the extensor digitorum communis.

The ulna is more superficial and therefore more easily exposed. A longitudinal incision is made of the desired length along the dorsal aspect. After carrying the incision through the deep fascia, the flexor carpi ulnaris muscle is stripped off medially, and the extensor carpi ulnaris laterally for an appropriate distance. If exposure of the upper third is desired, the anconeous must be separated from the bone laterally.

Fractures of the Forearm Bones Near the Elbow

Occasional fractures near the elbow in children may require a cutting operation. However, generally speaking, it is better to accept moderate angulation, or even slight overlapping, than to do an open reduction on patients under the age of fourteen. In childhood, angulation up to, or in slight excess of, 20 degrees will be corrected by growth.

Monteggia fracture is that in which the proximal third of the shaft of the ulna is broken by violence that also produces forward dislocation of the head of the radius. Then the problem lies in controlling the forward displacing pull of the biceps brachii. Open reduction is required. A four-hole metal plate may be applied to the ulna and the torn orbicular ligament of the radius repaired by suturing. A Rush medullary pin in the ulna yields excellent results and is the internal fixation of choice[5]. The head of the radius may be maintained in reduction by splinting the elbow in acute flexion, thereby obviating repair of the orbicular ligament.

A childhood variation of the Monteggia injury includes the fracture of the neck of the radius with displacement of the shaft. The author has been successful in two cases by employing open reduction and medullary pinning of the ulna and closed reduction of the radius. After stabilizing the ulna, the broken radius was securely held by flexion.

Greenstick fractures of childhood are generally best treated by completing the fracture and splinting in alignment in a circular plaster-of-Paris splint. However, if good alignment can be obtained by preserving the intact side of the periosteum, the "breaking through" procedure is not required. These injuries have the property of "springing back" into deformity which is the reason for completing the fracture before applying the splint.

Torus fractures are those in which there is enough damage done to the cortex to cause a wrinkle or fusiform swelling at the level of injury and not break through the periosteum. The Latin word means knot, and is illustrated in Figure 7. This injury is treated by splinting, no reduction being indicated.

Fracture of the coronoid process of the ulna is most often a complication of posterior dislocation of the elbow. If it does not fall into satisfactory reduction after reduction of the dislocation, open reduction with suturing is needed.

Fracture of the olecranon process of the ulna without separation may be treated by splinting with the elbow extended. When there is separation, cutting surgery with internal fixation is required. A Rush medullary pin affords excellent internal fixation[6]. The elbow is splinted in flexion at an angle of 90 degrees. The splint may be removed in four weeks and the pin in eight.

Fifteen Forearm Facts

1. Fracture of the styloid process of the radius and epiphyseal separation of the distal radial epiphysis lend themselves to the same treatment as the typical Colles' injury.

2. The radiographic criteria of adequate reduction in the Colles' fracture is that the styloid process of the radius be well distal to that of the ulna in the postero-anterior view, and that the articular arc of the radius be tilted anteriorly in the lateral view.

3. Guard against displacing pull of the brachioradialis and pronator quadratus muscles in fractures of the distal end of the forearm.

4. Advancing years in the patient with Colles' fracture makes a good result more difficult.

5. Fractures of both bones of the forearm in children may be efficiently treated by closed reduction. The exceptions are those near the elbow.

6. In order efficiently to immobilize the forearm, the splint for all injuries above the level of Colles', should extend from the metacarpophalangeal joints to the upper arm holding the elbow at a right angle.

7. Fracture of the shaft of both radius and ulna in adults requires open reduction and internal fixation.

8. The Rush medullary pin is the internal fixation device of choice.

9. Monteggia fractures of both children and adults are best treated by open reduction, at least, of the ulna.

10. In the management of fractures of the forearm it is important to remember that the radius is more important near the wrist and the ulna more important near the elbow.

11. Increasing the deformity, engaging the

(continued on page 160)

New Concept of Edema Formation

WALLACE MARSHALL, M. D.
Two Rivers, Wisconsin

The process of inflammation is the most important pathologic change which accompanies disease and trauma. There is a definite slowing of the terminal circulation in such an involved area. The carbon dioxide content of this blood tends to become increased. The membrane selectivity of cells changes so that sodium enters these cells and potassium leaves this injured area.

Corcoran[1] states that some 75 per cent of the body weight is water. Intracellular fluid accounts for about 50 per cent of body weight, and the extracellular fluid for only 25 per cent. The mass of the intracellular compartment is larger. Cytophysiologically, it may be the more important, since its content must be rigidly maintained for cells to continue living. From the body as a whole, intracellular fluid is no more important than extracellular fluid from which it must be ultimately derived. As concerns the geneses, manifestations, and the treatment of edema, extracellular fluid is thought of being the more important part.

Adequate therapy for edema and exudatory disorders cannot be appreciated unless the medical profession understands the basic pathophysiology which produces such disorders. Corcoran states that the extracellular fluid is produced by the filtration of plasma under pressure in the arterioles and the capillaries. At the venous end of the capillaries, the hydrostatic pressure drops. The osmotic pressurefrom the protein within the capillaries at this venous portion draws back the fluid. Hence, the interstitial fluid both escapes and is drawn back to the capillaries. This constant movement of interstitial fluid is under the influence of the arteriocapillary of hydrostatic and also the osmotic pressures which affect the blood plasma. So edema arises whenever the constant movement of this interstitial fluid fails, as when more of this fluid escapes into the tissues than is removed by the lymphatics and capillaries.

The main factors which produce edema in tissue are a wide arteriolar dilatation which creates an increase in the capillary filtration pressure. Hypoproteinemia can reduce the proteins' plasma pressure. This produces the inability of the interstitial fluid to become reabsorbed in the capillaries.

Venous pressure can become increased so that the venous end of the capillaries increases the hydrostatic pressure, which prevents an adequate reabsorption of fluid. Another cause for edema production arises from the obstruction of the lymph channels as is noted with patients who suffer from elephantiasis due to the Filiaria Bancrofti which actually plug the patient's lymphatic channels. This edematous fluid, in elephantiasis, is rich in protein, and its osmotic pressure soon equals the capillary pressure. Such a pathologic situation creates a "vicious cycle" by increasing edema.

Of the above causes for edema, which interfere with the movement of fluid, only hypoproteinemia and venous congestion produce the most common causes for such a pathologic fluid accumulation which is known as edema formation.

So far as the author is aware, edema can involve any type of anatomic structure.Of all the areas of the human body most unlikely to develop such a pathologic state, perhaps the human brain would be the least likely to show such edema, because of its unusual and highly specialized anatomic structures. Its blood supply is unusual as is the structure of bones compared to such a structure as the human skin. The structure of bone is so compactly built that it cannot expand with the formation of edema. However, the adjacent structures around bone are very capable of becoming edematous.

Returning to the anatomic concept of the human brain, Evans and Scheinker[2], in describing the origin and physiopathologic mechanism of post-traumatic swelling and edema, believe that those histologic changes which occur about the vascular structúres in their patients' brains provide important information. These investigators believe that local circulatory changes produce both the increased amount of tissue fluid and also the resultant tissue changes. A vasoparalysis of the capillaries and venules in the deeper portions of the brain result from traumatic insults. A slowing of the blood stream takes place, which is followed by a swelling of the tissue in these injured areas. Increased venous pressure then presumably takes place with a conceivable reversal of the normal fluid exchange. Carbon dioxide accumulates because of the less effective circulation· Further vascular dilatation and an increased permeability of the vessel walls follow. Actual structural changes in the capillaries and veins might result, while the developing edema of the tissue further retards the circulation. All these factors contribute to hypoxia which interferes with the proper oxygen-carbon dioxide exchange. Normal function of the involved tissues becomes markedly impaired. If this damage affects a vital brain area, death might ensue. Similar mechanical changes in the deeper vessels of the brain, according to these same investigators, may well also affect both the white and gray matter. These workers postulate the clinical viewpoint that one must accept the reality of cerebral swelling and edema, which they regard as being of the same origin but of lesser degree. But in the opinion of this writer, both may be regarded as being quite similar if not completely identical as to their pathophysiologic origin.

From the evidence which has been presented so far, the concept of the traumatic origin of edema has sound scientific backing, which postulates a theory which follows those teachings which can be found in some of our papers on edema formation and various exudative phenomena 3, 4, 5, which we have studied in different portions of the human body.

Edematous tissues and/or organs, if adjacent to an exit point, can discharge their excessive fluid contents. Such an example is the artificially made paracentesis which allows, at least temporarily, the exit for such fluid contents and the ensuing reduction of edema.

Idiopathic infantile diarrheas can create a marked inflammatory response in the involved gut regions. The previously mentioned pathophysiologic responses occur which promulgate the excessive formation of edema in these delicate walls of the gut. The close proximity of the intestinal lumen allows for the rapid discharge of such transudatory fluid, and the resulting fluid discharge produces the well-known diarrheal responses which are pathognomonic for these infantile diarrheas.

To review the pathophysiologic reactions which ensue as the result from trauma or inflammation, the microcirculatory components of the involved intestinal areas become inflamed. The microcirculation becomes engorged with blood. The venous pressure becomes increased, and the capillary permeability of these dilated terminal vessel walls allows the fluid to leave these containers and invade the adjacent intestinal walls which become markedly edematous. This excessive fluid then escapes into the intestinal lumen, and such edematous discharge produces the well-known diarrheas which are associated with such an infantile idiopathic dysenteric reaction. Similar pathophysiologic terminal vascular responses occur, one should remember, with almost every other edematous or exudative type of malady. The initial trigger response to such traumatic and inflammatory reactions is the markedly dilated state of the microcirculatory blood vessels. Similar reactions can be observed in those lochial discharges which follow childbirth, the very troublesome and highly dangerous loss of tissue and blood fluids which accompany serious burns of all types, and the more or less localized response of the integument to certain noxious substances, as can be exemplified by the body's reaction to poison ivy or penicillin previously sensitized patients. Many other diseases too numerous to mention, also show similar edematous or exudatory reactions which accompany inflammation. Nelson[6] has written, concerning the pathology in infantile diarrheas, that not infrequently the gross changes are limited to a generalized increase in vascularization of the intestinal tract. In other words, the infant's gut shows dilatation of the blood supply to that area. Such a phenomenon has been observed many times by surgeons when an appendectomy is performed concomitantly in the presence of a diarrheal state. In such instances, the child's gut shows marked vascular dilatation of the involved gastrointestinal tract, so much so that the performance of an appendectomy with such a diarrheal complication increases considerably the danger from peritonitis due to postoperative leakage.

The dangerous effects from acute infantile diarrhea are due mainly to the loss of fluid which results from the diarrhea. A definite disturbance in both the electrolye and water balances may prove to be quite serious, since infants apparently lose water more readily than do older children. As the result from such a great loss of water, anhydremia and the dehydration of bodily tissues may result therefrom, which can affect the renal function, and which gives rise to a definite increase in acidosis. But with concomitant vomiting, a loss in hydrochloric acid content results, which tends to balance the acid phase of such a state. Hence, it is wise to determine the pH of the blood, in such cases, to determine the acidity or the alkalinity of the blood when both diarrhea and vomiting occur together.

The loss of body fluids, due to diarrhea, can certainly be viewed as being but another example of an exudative reaction. In such a case, the diarrheal discharge is the exudate. And, as in other exudative disorders, the trigger mechanism is the markedly dilated state of the terminal blood vessels (microcirculation) which supply the involved intestinal areas.

This dilated microcirculation produces venous congestion, then an increased venous pressure, which produces increased permeability of these terminal blood vessels. The fluid escapes from these dilated vessels (by diapedesis) and invades the surrounding tissues. In the case of inflammation, which is produced by a dysenteric form of infection, the intestinal walls receive the oncoming edematous fluid. The internal pressure in the thin gut areas, which is caused by continuous edema formation, finally spills its excessive edematous fluid into the lumen of the gut. Hence, a severe diarrheal discharge results.

SPECIFIC THERAPY FOR ACUTE IDIOPATHIC DIARRHEAS

The obvious therapeutic approach is to treat the specific cause. If the diarrhea is due to a specific organism, such must be attacked with a suitable antibiotic or immunologic agent. However, many times infantile diarrheas are caused by unknown agents. At times and for diverse reasons, the offending agent cannot always be isolated and identified. Not all physicians have adequate laboratory facilities available at all times.

Nevertheless, whatever the exact nature of the offending agent, such produces inflammation in the gut structures. The forementioned pathophysiologic mechanisms spring into action, and set off the dilated microcirculation which begins to produce edema and then the exudation of fluid into the alimentary lumen.

From much previous experience, it has been learned this pathophysiologic chain of events can be reversed partially at laest so that the trigger mechanism, the dilated microcirculation, can be constricted. Such a physiologic response tends to reverse the exit of tissue and blood fluids so that these become reabsorbed and the diarrheal discharge is halted. Systemic vasconstrictors apparently do not produce constriction of the terminal blood vessels (microcirculation) satisfactorily so they can be employed therapeutically to produce a specific microcirculatory constriction.

A great deal of our previous research has demonstrated that edema formation in tissues and organs, which is the forerunner for exudation, can be controlled by the specific pharmacologic action of Kutapressin*. Our usual procedure for treating idiopathic diarrheas of infancy is to inject subcutaneously or intramuscularly one cubic centimeter of this material in an arm or the gluteal region once daily. However, in those severe cases where a great deal of dehydration threatens the life of the infant, a similar amount of Kutapressin can be administered two or three times daily to control further dehydration rapidly and efficaciously.

To date, 18 infants with acute idiopathic diarrheas have been so treated with apparent success. The diarrheal discharges are usually controlled within two hours after the administration of the initial dose of Kutapressin. However, daily injections should be continued until the infant is well out of danger.

No other medications were administered concomitantly during the current series of cases because it was necessary to learn if this material alone could control the diarrheal discharges promptly and adequately. However, if other medications are desired to be given while an infant is being treated with Kutapressin, there are no presently known contraindications for such concomitant therapy.

As soon as the diarrheal discharge is controlled, by the above new procedure, the necessary fluids and electrolytes must be supplied rapidly as indicated.

This same procedure has worked adequately in adults with acute idiopathic diarrheas. However, 2 cubic centimeters are administered to adults per dose. My readers are requested to remember that the same basic pathophysiologic phenomena are present whenever edema or exudative disorders are encountered. It matters not where in the human body such inflammatory reactions are found. Those exudations, due to biliary surgery, have been suppressed by microcirculatory constriction as has the exudative phenomenon which is connected with postpartum lochial discharge. Those edematous integumental responses which are found following ivy poisoning or in penicillin reactions in susceptible patients, are but another manifestation of the usual inflammatory response which produces decided dilatations of the microcirculatory components of the human skin. The exudative phenomenon, which is closely associated with excessive liquid fecal discharge in the diarrheas is caused merely by the inflammatory response in the human intestinal tract. The acute, boggy prostate exhibits a comparable edematous response to inflammation of that organ.

All of these pathophysiologic reactions to inflammation exhibit markedly dilated microcirculatory phenomena which produce the transudation of edematous tissue. If allowed to escape, as by paracentesis, or by an exit because of lowered permeability of the cellular membranes, the escaping fluid becomes an exudate. Such a discharging area also allows the escape of precious substances which are life-sustaining in nature. Such untoward fluid losses must be stopped quickly to avoid hypoproteinemia, electrolyte loss, dehydration, and other dangerous bodily states.

---

*Kutapressin is derived from crude liver by a selective process. This material is manufactured by the Kremers-Urban Co., of Milwaukee.

In this paper, a new theory of edema and exudate formation has been presented. Their speedy correction has been effected with the use of the only presently known microcirculatory constrictor. The vicious cycle, which produces the loss of bodily fluids through microcirculatory vasodilation, can be reversed safely and efficaciously with the proper use of Kutapressin.

SUMMARY

A new theory for edema formation and the exudative loss of fluids is presented in detail. These phenomena are described as they occur in various portions of the human body. Acute idiopathic diarrhea is explained as but another form of those exudative responses to inflammation. The main trigger mechanism for its origin lies in the markedly dilated microcirculation (terminal blood vessels). Venous congestion produces a rise in both the venous pressure and in the capillary permeability of these terminal blood vessels. Fluids and precious life-sustaining substances then escape from these vessels and invade the adjacent tissues. This chain of events produces edema which might escape into an adjacent lumen, as occurs with those patients who exhibit marked diarrheal (liquid fecal) discharges.

The author describes the reversal of the above chain of events through the constriction of the markedly dilated microcirculation. He employed one cubic centimeter daily parenteral injections of Kutapressin. This injectable material constricts the dilated terminal blood vessels, and thus reverses the edema and exudation-making chain of events. Thus, these precious life-sustaining fluids, which contain proteins, electrolytes, and other important substances, are returned to the body economy.

It is emphasized that the acute idiopathic diarrheas of infancy are but another manifestation of the inflammatory reaction of viable tissues and organs to infection or trauma. Specific therapy is based on the control of edema formation and exudation through the proper constriction of the markedly dilated microcirculaiton.

REFERENCES

1. Corcoran, A. C.: Edema I. Mechanisms of edema formation. Cleveland Clinic Quart. 12:117 (Oct.) 1945.
2. Evans, J. P. and Scheinker, I. M.: Histologic studies of the brain following head trauma. J. Neurosurg. 2:306-14, 1945.
3. Marshall, W.: Inflammatory edema accompanying microcirculatory disease and its specific therapy with microcirculatory constriction. Fall issue (1957) of the Miss. Valley M. J.
4. Ficarra, B. J., Marshall, W., and Bonner, N.: Early suppression of postoperative biliary drainages. To be published.
5. James F. and Marshall, W.: Reactions to tetanus antitoxin: their etiology, prevention and treatment. To be published in S. D. J. of Med. and Pharm.
6. Nelson, W. E.: Mitchell,Nelson Textbook of Pediatrics. W. B. Saunders Co., Phila. 1950, p. 810.

(continued from page 156)

fragments and manipulating into alignment is a good method of reduction.

12. Tenderness over a fracture is a sign that union is not solid.

13. A "sprained" forearm may on x-ray examination prove to be a torus fracture.

14. Fracture of the olecranon process of the ulna with separation requires open reduction and internal fixation.

15. Fractures of the forearm are the most common of all and often the most difficult to treat satisfactorily[7].

REFERENCES:

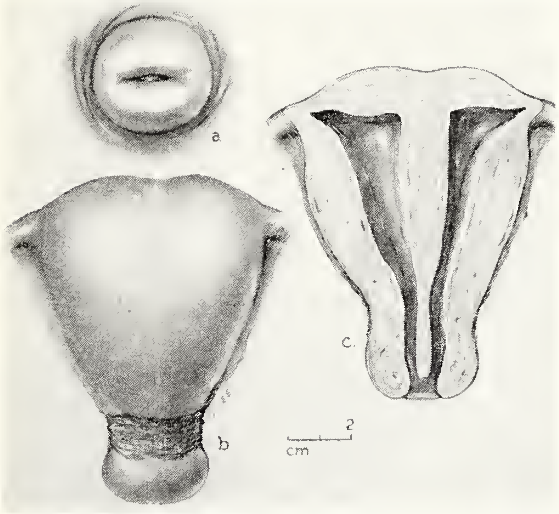
1. Caldwell, G. A., Treatment of Fractures (textbook), page 103 Paul B. Hoeber, Inc,, New York, 1943.
2. Sante, L. R., Principles of Roentgenological Interpretation, page 6, Edwards Brothers, Inc., Ann Arbor, Michigan, 1940.
3. Rush, L. V., Atlas of Rush Pin Technics, page 215 to 225 The Berivon Company, Meridian, Mississippi, 1955.
4. Magnuson, P. B., Fractures, page 133, J. B. ippincott Company, Philadelphia, 1936.
5. Hill, S. A., Fractures of hte Forearm, The Mississippi Doctor, 31:350-361, March, 1954.
6. Hill, S. A., The Rush Pin (an editorial) Southern Medical Journal, 48:663-664, June, 1955.
7. Stuck, W. G., Anatomical and Mechanical Aspects of Treatment of Fractures of the Forearm, Texas State J. Medicine, 41:232-240, September, 1945.

Congenital Anomalies of the Uterus*

BRIEF LITERATURE REVIEW AND CASE PRESENTATION

SAMUEL E. FIELD, SR., M. D.
RICHARD J. FIELD, JR., M. D.†
Centreville, Miss.

Congenital abnormalities of the female genital tract have led to interesting scientific discussions in the literature for many years. However, a practical working knowledge of these abnormalities is essential when confronted with a case, as we have been recently. They may be found in refractory cases of sterility and menstrual disorders and particularly in pregnancy. Our ability to detect these deformities may avert many dangers to mother and child, in the latter instance.



a) Appearance of the cervix showing two openings into the uterine cavity.
b) External appearance showing the indentation of the fundus.
c) Cross section showing the septum as it extends the entire length of the uterine cavity noting the slight enlargement of the cavity on the right in which the pregnancy occurred.

EMBRYOLOGY AND ETIOLOGY

All abnormalities of the female genital tract are directly related to failure of fusion of the embryonic Mullerian ducts. This fusion is usually completed by the twelfth week of embryonic life. The proximal limbs of the ducts become the Fallopian tubules and the middle and distal ones form, by fusion, the fundus and cervix of the uterus and vagina. Any degree of failure in this process will lead to a completely separate uterus, cervix and vagina called uterus didelphys on one extreme, to the uterus with the minimal fundal indentation called the uterus arcuatus on the other with all imaginable variations in between. The diagrammatic representation of our case will give one an idea of what may occur.

Many theories have evolved to explain this phenomenon, but our study leads us to believe that simply a failure of Mullerian duct fusion occurs due to unknown causes is the only honest explanation.

CLASSIFICATION

We have found the classification given by Jarcho to be the most accurate and will be given here.

1. *Uterus Didelphys*—Complete duplication of the vagina, cervix and uterus, probably the rarest of all. During a twenty-five-year period in New York Lying-In Hospital, as reported by Smith, only four cases of uterus didelphys were seen in 114,243 consecutive obstetrical patients admitted. These women may go through a normal life without any difficulties unless some obstetrical problem arises. The latter is its most important clinical interest. Schauffler reported fifty-three per cent (53%) abortion rate among thirty-three pregnancies he followed with this particular difficulty. It is believed that the high incidence of abortion is caused by the poor musculature of the fundus, poor blood supply to the intra-uterine septums and the action of the non-gravid uterus. The latter may continue to menstruate during a pregnancy of the other cavity, contract irregularly and mechanically retard the progress of labor.

2. *Uterus Duplex Bicornic Bicollis.* Here the duplication of the vagina is absent. The difficulties encountered with uterine didelphys apply here also.

3. *Uterus Bicornis Unicollis or Bicornuate Uterus.* Here there is an incomplete fusion of the fundic segments producing widely separated horns, either of which may receive the embryo. The chief complications are with hemorrhage and incarceration of one of the horns during labor. The abortion rate in these instances is extremely high. Rarely, as reported by Perrigard, one of the horns may be rudimentary and not connected to the main uterine cavity at all, thus producing a situation similar to

---

†The Field Clinic, Centreville, Miss.

an ectopic pregnancy (Crossen and Crossen).

4. *Uterus Septus.* This is the problem with which we were confronted and is shown diagrammatically. There is a mild depression in the fundus which otherwise appears perfectly normal. Internally with failure of fusion, there is a septum which extends the entire length of the uterus. Again the opposite cavity will produce complications during gestation of bleeding and of hypertrophy. The distressing problem in this particular case came not only from frequent abortions but also from continuous, persistent bleeding during the non-pregnant period.

5. *Uterus Subseptus.* Here the fusion is incomplete producing a septum in the upper half of the uterine cavity. The main complication is not in abortion but in producing transverse or oblique fetal presentations.

6. *Uterus Arcuatus.* This is the most frequent type of uterine congenital deformity. Falls reported 155 out of 7,553 deliveries recorded at the Research and Educational Hospital in Chicago. The complications as reported by him were prematurity and postmaturity, with prolonged first stage, breech and transverse presentation, sudden intra-uterine fetal death, and retained placenta.

7. *Uterus Unicornis.* This probably is the most uncommon of all (Jarcho). A review by Schumacker found only 28 cases in the literature. Here there is only one Fallopian tubule.

CASE REPORT

Patient, Mrs. J. R. W., white female, age 17, was referred to us by Dr. J. W. Brandon, Woodville, Miss., on January 25, 1953, about three months pregnant with threatened abortion, cramping and bleeding. She was given sedatives, but cramping continued and twenty-four hours later the placenta was presenting through the cervix. A large amount of placenta was removed with sponge forceps and light currettement done. It was felt that a complete "clean out" was not accomplished and that a repeat D and C would probably be necessary later. She was allowed to go home.

Patient returned on February 13, approximately three weeks later, still having daily bleeding. A second D and C was done. The fundus had returned to normal size. It was noted that there was a dense band or septum dividing the cervix in about two equal halves in the mid-line. A small amount of retained placenta was removed from the right side of this septum. Further examination showed this septum to be complete through to the top of the fundus, dividing the uterus into two halves of about equal size, the right perhaps the larger.

She became pregnant later the same year and with much difficulty. She was finally carried to eight months and delivered a small female infant weighing about four pounds eight ounces, on March 26, 1954. This baby is a fine healthy child now. We are certain that the pregnancy was also in the right side.

During the next (approximately) eighteen months she progressed fairly well, but had irregular bleeding with frequent spotting and pelvic pain.

She was again admitted on January 31, 1956, following daily bleeding and cramping since January 1, 1956. D and C was done, cleaning out both cavities. There was no evidence of pregnancy.

She was readmitted July 24, 1956, about ten or twelve weeks pregnant with history of slight bleeding and cramping for two weeks, and on day of admittance expelled portion of placenta. D and C was done the next day and remaining portion of placenta removed. This was again in the right side.

It was at this time that hysterectomy was decided upon. Total hysterectomy was done on September 17, 1956, and patient made an uneventful recovery.

MANAGEMENT

Successful excisions of the uterine septum have been reported by Luikert, Rockey and Kerwin among others. Most involved abdominal approach with hysterectomy and removal of the septum by sharp dissection. Rockey, however, clamped the septum from below and allowed it to slough away with good results. These procedures were contemplated in our case and discussed with the patient. She chose hysterectomy rather than risk any further difficulties. Certainly, however, under the proper circumstances surgical correction should be attempted.

CONCLUSIONS

1. Knowledge of congenital abnormalities of the uterus is important in handling gynecologic and obstetrical problems.

2. These are abnormalities due to embryonic failure of fusion of the Mullerian ducts.

3. A case presentation of a successful delivery with uterus septus.

4. Surgical correction of these anomalies should be attempted.

SUMMARY

This is a brief review of the literature regarding congenital abnormalities of the uterus with discussion of the embryonic origin, classification, case presentation, and surgical correction.

REFERENCES

Jarcho, J. Malformation of the uterus, review of the subject, including embryology, comparative anatomy, diagnosis and report of cases. Am. J. Surg., 1946, 71: 106-166, Jan.

Smith, F. R. The significance of incomplete fusion of the Mullerian ducts in pregnancy and parturition, with a report of 35 cases. Bull. Lying-In Hosp., N. Y. City, 1932, Feb.

Schauffler, G. C. Double Uterus with pregnancy, J.A.M.A., 117:1516, 1941.

Perrigard, G. F. Duplication of uterus and vagina. Canada M.A.J., 47:33, 1942.

Crossen, H. S. and Crossen, R. J. Diseases of Women, 9th Vol., pp. 748-50, St. Louis, 1941, C. V. Mosby Co.

Falls, F. H. Uterus Arcuatus, Am. J. Obst. and Gyn. 38:661, 1939.

Schumacker, H. B., Jr., Congenital Anomalies of Genitalia associated with particular reference to true unicornuate uterus. Arch. Surg., 37:586, 1938.

Luikert, R. Technic of successful removal of the septum of uterus septus and subsequent deliveries at term. Am. J. Obst. and Gynec., 1936, 31:797-803, May.

Kerwin, W. Uterus septus with special reference to operative technic. Am. J. Obst. and Gynec., 1925, IX: Mar.

Benjamin, E. L. and Danforth, W. C. Bipartite uterus. Am. J. Obst. and Gynec., 1940, 39: 704-708, Apr.

Carrington, G. L. Incomplete bipartite uterus with unilateral hematocolpos and salpingitis. Am. J. Obst. and Gynec., 1933, 25: 924, June.

Kickham, C. J. Uterus septus duplex, with full-term twin pregnancy. Surg. Gynec. and Obst., 1922, 443-444, Oct.

Shelley, H. J. Biscptate uterus, adenocarcinoma in one uterine cavity and a pedunculated polyp in the other. J.A.M.A., 1938, 110: 1913-1914.

Acosta-Sison, H. Full-term labor after a subtotal hysterectomy in a double uterus. Am. J. Obst. and Gynec., 1947, 54: 129-131, July.

Brown, D. B. A case of uterus pseudodidelphys and twin pregnancy. J. Obst. and Gynec., 1956. 63: 395-396, June. Brit. Emp.

Dorgan, L. T. and Clarke, P. E. Uterus didelphys with double pregnancy. Am. J. Obst. and Gynec. 1956, 72: 663-666, Sept.

Embrey, M. P. A case of uterus didelphys with unilateral gynatresia. Brit. M. J., 1950, pps. 820-821, Apr. 8.

Fly, O. A., Jr., and Pratt, J. H. Carcinoma of the fundus occurring in double uterus. Am. J. Obst. and Gynec., 1956, 72: 669-673, Sept.

Galang, J. S. Uterus didelphys. J. Philippine M. A., 1948, 24: 89-91, Feb.

Herzig, N. Pregnancy associated with double uterus and double cervix. New York State J. M., 1950, 50: 467, Feb. 15.

Hoerner, M. T., Wilkinson, L. H., et al. Uterus didelphys with ectopic tubal gestation. Am. J. Surg., 1947, 74: 100-102, July.

Johnson, C. G. Uterus didelphys with congenital absence of the right kidney. Am. J. Surg., 1952, 83: 238-239, Feb.

Jones, H. W., Jr., Delfs, E., et al. Reproductive difficulties in double uterus. The place of plastic reconstruction. Am. J. Obst. and Gynec., 1956, 72: 865-883, Oct.

Keevil, N. L. Uterus didelphys, a case of normal delivery in uterus didelphys, after a previous caesarean section. J. Obst. and Gynec., 1943, 50: 146-148. Apr.

Kohl, M. F. F. Abortion of decidual cast complicating pregnancy in uterus didelphys. Am. J. Obs.t and Gynec., 1952, 63: 676-678. Mar.

Leverton, J. C. S. A significant case of uterus didelphys solidus with gynatresia adenomyosis, and pelvic endometriosis. Obst. and Gynec., 1953, 1: 681-688, June.

Masson, J. C. and Kaump, D. H. A review of seventeen cases of interesting anomalies of the female genital tract. Am. J. Obst. and Gynec., 1937, 33: 566, Apr.

Schrieber, S. L. and Smith, J. K. Absence of the vagina, uterus, right kidney and ureter and ectopic (pelvis) left kidney. Am. J. Surg., 1946, 71: 681-688, May.

————————. Double uterus with fibroids including double cervix and absence of the vagina. Am. J. Surg., 1950, 79: 576-578, Apr.

Semmens, J. P. Uterus didelphys and septate vagina, review, report of a case with gynatresic right vagina and associated hematoceles. Obst. and Gynec., 1956 8: 620-626, Nov.

Siegler, S. L. Adenocarcinoma in one horn of uterus didelphys. Am. J. Obst. and Gynec., 1950, 59: 162-167, Jan.

Thorec, P., Moses, J., et al. Simultaneous pregnancies in a Fallopian tube and bicornate uterus associated with three Fallopian tubes, a first world case report and review of the literature. Am. J. Surg., 1950, 79: 512-523, Apr.

Vernaglis, J. B. Double uterus with horn menstruating into the abdomen. New England J. M., 1948, 239: 732-736, Nov. 11.

You write with ease to show your breeding.
But easy writing's curst hard reading.
And easy reading's curst hard writing.

—R. B. SHERIDAN

—EDITORS, JOURNAL OF GENERAL MICROBIOLOGY

INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW

JOSEPH P. MELVIN, Jr., M.D.	Cardialagy
HARVEY F. GARRISON, Sr., M.D.	Pediatrics
JAMES D. HARDY, M.D., and STAFF, Department af Surgery, University Medical Center	Surgery

CARDIOLOGY

The obvious importance of atherosclerosis, as a cause of death, has engendered tremendous interest in this serious disturbance and stimulated intensive investigation. One major phase of this subject now under study and debate, is the relationship of cholesterol and other lipids to atherosclerosis, both as a possible causative factor and as an indicator, or predictor of existing or impending disease. It is with this latter relationship that we are interested here.

The determinations in large groups of cholesterol and lipoprotein fractions, showed that the predictability value of each was closely similar, but cholesterol was found to be somewhat superior in predicting atherosclerosis, when it was elevated, than the elevation of lipoproteins. This statement is under dispute by Gofman, but the consensus is that some slight predictable value may be ascribed to elevated cholesterol and lipoprotein, and that the predictability is in favor of the former, rather than the latter.

However, in attempting to predict for the individual—and this is primarily what we are concerned with as practitioners—the overlap, as regards predictability value, is very great and the difference between individuals in a group, consisting of high cholesterol types, is often greater than the difference between the averages of the groups. For practical purposes, determinations of cholesterol and lipoproteins have no real value in predicting whether a given individual will develop an overt attack during a period of observation of one to two years. This point is further emphasized by the fact that, judging from statistical studies, one thousand normal males, forty to fifty-nine years of age, could be expected to develop about twenty atherosclerotic complications during a two-year period. If the anticipated lipoid figures of these twenty subjects are compared with the median figures of the entire group, not over fourteen would be expected to fall in the upper half and not less than six (false negatives) into the lower half. Even if the period of observation were protracted to twenty years and if we may assume that the rate of development of atherosclerotic accidents remains the same, there should still be three to four false positives for each true prediction, from a practical standpoint, an intolerable discrepancy.

In conclusion, it may be stated that the serum total cholesterol provides as much (or as little) information as more elaborate and difficult chemical procedures (lipoprotein studies) and that neither may be expected, in an individual, to be of any worthwhile predictable value.

COMMENT: Many of us, over the years, have been in the habit of ordering serum cholesterols on patients, in an attempt either to further diagnosis of a particular case, or to evaluate the susceptibility of that particular case to atherosclerotic accidents. These figures show that this is a very hazardous procedure, in terms of predictability, and very worthless, in terms of diagnosis. We can not tell a patient anything from a serum cholesterol, unless he belongs to the true Essential hypercholesterolemia group. Lipoprotein studies are even more worthless for the individual, even though, over large groups, they may provide in the future, some statistical information worth the study.

PEDIATRICS

THE OFFSPRING OF ALCOHOLIC PARENTS. G. Heuyer, R. Mises and J.-F. Dereux. Presse med. 65:657-658 (April 10) 1957 (in French) Paris.

In discussing the influence of alcoholism in the parents on the occurrence of physical and mental defects in their offspring, the authors review the literature on this problem and report their own findings on 100 children, the offspring of parents who were addicted to alcohol. These patients were seen in consultation at the neuropsychiatric department of the children's clinic of the Salpetriere. The 100 children included 10 with essential epilepsy, 30 with psychomotor disturbances, and 60 with behavior problems. Of this last group, about 20 had psychomotor instability, whereas, in the other 40, the troubles appeared to be related to affective difficulties, in the form of either existing conflicts or sequels of earlier disturbances.

After discussing the theories that have been advanced with regard to the heredity of alcoholism and the present concepts on this problem, the authors conclude that the concept of hereditary alcoholism, allied with the theory of degeneracy should be rejected. Although children born of parents addicted to alcohol show a rather high incidence of psychopathic manifestations, genetic factors were thought to be of much less importance than are defective training and social, economic, and familial disturbances.

COMMENT

Having had an experience in general practice for over fifteen years and having seen many numbers of patients along this line, it is certainly convincing to our point of view. It is noted that the authors in this abstract are quoted from a Paris journal. It is, therefore, significant to note that the French people, almost as a whole, are almost daily drinkers of alcohol or alcoholic derivatives. As a personal comment in regard to this subject, we had the good fortune of having a father who was a total abstainer and all of his boys were likewise total abstainers. We have seen many cases of offsprings of alcoholics that would make one think several times before saying that the experience of the one who gave this abstract is reporting from experience and facts that would agree with the observations of most of our present-day physicians in general practice.

SURGERY

Acute Appendicitis in Infancy and Childhood: a twenty-year study in a general hospital

John H. Foster, M.D., Wm. H. Edwards, M.D.

ANN. SURG. 146: 70-77 (July) 1957

(Reviewed by Dr. Thomas K. Wiliams, Jr., University Medical Center, Jackson, Miss.)

Operation for acute appendicitis was performed on 489 children during the 20-year period of this study. Twenty-seven per cent revealed no disease or some other disease process, the most frequent being mesenteric adenitis. Appendicitis was more frequent in male patients with an incidence of 60 per cent.

Children under age four had a much higher incidence of ruptured appendicitis than those in the older age groups, however, age of the patient was not considered a primary factor. Accurate diagnosis is frequently delayed in infants, and the authors feel this accounts for the increased incidence of rupture in infants. Operation was not performed for at least 90 hours in the children less than four years old who had a ruptured appendix.

Generalied peritonitis was twice as common in the younger age groups if rupture occurred.

The clinical history, physical findings and laboratory data may not be typical. The administration of cathartics and antibiotics may be partially responsible.

Five cases were treated non-operatively with two deaths.

In the acutely ill child a period of preoperative preparation using IV fluids, gastric suction, and antibiotics is beneficial.

Peritoneal drainage with appendectomy is preferred if a ruptured appendix is found. Twenty-five per cent of the cases of appendiceal abscess treated by drainage alone developed an acute exacerbation within one to eight weeks after leaving the hospital.

A majority of the patients with ruptured appendices received antibiotics postoperatively. IV fluids were administered at least 24 hours or more in 95 per cent of the patients. Blood, plasma, and Fowler's position were used if indicated.

Wound and pelvic abscesses were the most frequent postoperative complications. Nine cases developed intestinal obstruction and surgery was necessary in four.

There was no difference in postoperative morbidity in children who received antibiotics and those who did not if unruptured acute appendicitis was present. The mortality rate was lowered 13 per cent, however, when antibiotics were used in children with ruptured appendicitis.

The over-all mortality rate for this series was 3.9 per cent but there was a steady decrease from 8.8 per cent for the first 5-year period to 1 per cent for the last 5-year period. The mortality rate was greatest in infants under one year of age but this probably is the result of delay and difficulty in making the diagnosis.

The authors emphasize that the delay required for adequate preoperative preparation is essential for proper therapy.

THREE AWARDED FIFTY-YEAR PINS

Fifty-Year certificates and pins were delivered to three men in the Delta on Sunday, December first: To Dr. Leon Hawkins Brevard of Marks at eleven o'clock. The three communities participated to Dr. Grover C. Denson of Tutwiler at the First Methodist Church at two o'clock; and to Dr. Daniel O. Pierce of Jonestown at the Legion Hut at five o'clock. The three communities participated in these celebrations. Dr. Pierce was given a motor-driven wheel chair. The people of Tutwiler also had a nice gift for Dr. Denson.

Medical School Miscellany

MEDICAL CENTER MISCELLANY

The University Medical Center will sponsor three postgraduate programs for physicians within the next few months.

The first, a Postgraduate Seminar with round-table discussions, will be held Wednesday, January 22, at the Heidelberg Hotel and will be co-sponsored by the Mississippi Academy of General Practice.

"Recent Advances in Amputations and Prostheses" is the title of a one-day course to be held Feb. 28 with the Orthopedic Division and the Mississippi Division of Vocational Rehabilitation as sponsors. The annual Cardiovascular Seminar offered by the Mississippi Heart Association with the cooperation of the School of Medicine will open on April 2.

Speakers for the January 22 program are to be Dr. E. Grey Diamond, professor of medicine and chairman of the department at Kansas University Medical Center; Dr. Edward H. Hashinger of the KU clinical faculty and Dr. Samuel F. Ravenel, clinical professor of pediatrics at the University of North Carolina and former dean of the Southern Pediatrics Seminar at Saluda.

Formal lectures will be delivered during the morning with the entire afternoon to be given over to three separate round table discussions, each repeated three times so that all participants can share a question and answer exchange with each discussant.

Dr. Diamond will speak on EKG interpretation, Dr. Ravenel on infectious diseases of childhood and Dr. Hashinger on geriatrics.

Dr. Louis F. Rittelmeyer, Jr., associate professor of preventive medicine and chairman of the postgraduate education committee, will moderate the morning meeting. Moderators for the round table discussions are to be Dr. Thomas M. Blake, assistant professor of medicine, Dr. Blair Batson, professor of pediatrics and chairman of the department, and Dr. W. E. Lotterhos, clinical instructor in preventive medicine.

Dr. A. T. Tatum of Petal, president-elect of the Mississippi Academy of General Practice, will preside at a luncheon when Dr. Fount Richardson of Fayetteville, Ark., chairman of the American Academy of General Practice board of directors, is to speak.

The program is supported by an educational grant from Lederle Company which will host the luncheon and a social hour at the end of the session. Entertainment is also being planned for wives of physicians who come to the seminar.

Attendance at the course will be accepted for five hours Category 1 credit towards the AAGP postgraduate educational requirements.

Details of the orthopedic and cardiovascular conferences will be announced at a later date.

Hospital Meeting

The American College of Hospital Administrators will also meet at the Medical Center, January 20-24 when a program helpful to the administrator of the smaller hospital will be offered at its Eleventh Southern Institute.

Among other outstanding speakers will be Dr. Kenneth A. Babcock, executive director of the Joint Commission on Accreditation of Hospitals and Chancellor John D. Williams of the University.

Guests from Abroad

Three distinguished European physicians visited the Medical Center in November, guests of the obstetrics-gynecology department and the surgery department.

Dr. Karl-Erik Hageman, internationally known plastic surgeon who heads the burn center at the University of Lund Hospital, Malmoe, Sweden, spent Nov. 16-18 at the Center. In this country to read a paper before the American Society of Plastic Surgery Research and to attend a meeting of the Research Council of Plastic Surgeons, Dr. Hageman is studying new hospitals, such as University, for assistance in designing a 700-bed surgery hospital in Sweden.

The chairman of the plastic surgery department at the University of Edinburgh, Scotland, Mr. A. B. Wallace, spoke to medical students at the Center on Nov. 22. Mr. Wallace originated the exposure treatment in burns. He edits the British *Journal of Plastic Surgery* and is past-president of the British Plastic Surgery Association.

The following day, students heard a lecture by Dr. Grantly Dick-Read, English obstetrician whose book "Childbirth Without Fear," is internationally famous.

MISSISSIPPI ACADEMY OF GENERAL PRACTICE

Every year in December, Academy members receive notice of next year's dues. It is the time for another accounting too — reports on postgraduate study. In a few weeks all active members will be sent a list of courses conducted in the state that have been approved for Category I credit. Upon receipt of your 1958 membership card, mail your 1957 card, with the number of hours in both categories filled in, to M. A. G. P., P. O. Box 1435, Jackson, Mississippi.

NO MAN IS AN ISLAND

'*No man is an island, intire of itselfe . . . .* " wrote John Donne more than three centuries ago. And, no words better express the interdependence of man than these. They are ageless, applying as well today as the day they were written. But, in this great estate called Medicine, won for us by those who came before, bequeathed to us for mankind's good, and now ringed by enemies and riven by dissension, there is no John Donne to remind us that everything which happens to even the least of our number inevitably affects us. Every time a GP is wronged, we are wronged; every time his rightful privileges are denied, we are denied. His problems are our problems; his gains our gains. What happens to him happens to us all.

When next you read that a hospital has curtailed GP privileges, or that fewer and fewer graduates enter general practice, or that only 2 per cent of the residencies are for the generalist, or that the American College of Surgeons inferentially brands us as bungling butchers or criminal fee-splitters, or that the family doctor has been relegated to the role of a house-call specialist, or that the dedicated planners of the welfare state have opened the door to socialized medicine a little wider with the passage of such legislation as HR 7225, just disregard these signs . . . they can't apply to you!

Just go on making money, playing golf, missing meetings and not keeping informed. Sit back while the Academy struggles to protect you. Your dues have bought you the right to let others carry on your fight! Don't take part in discussions. Never present a paper. Don't enroll new members. If anyone asks why you stay aloof, tell him you "don't want to get involved in medical politics"! And then one day when Medicine, as we know it, is dead and you have become a number in a government file system, you may bitterly recall what John Donne wrote so long ago— "*No man is an island, intire of itselfe . . . .* "

-Reprinted from Wisconsin *Family Physician* in part periodical of Wisconsin AGP

SEMINAR

Don't forget the postgraduate seminar with round-table discussion, on January 22, 1958 at 10:00 A.M. at the Heidelberg Hotel. The seminar is co-sponsored by the Mississippi Academy and the University of Mississippi School of Medicine. This meeting will provide five (5) hours of Category I (formal) credit. Luncheon and hospitality hour as well as registration for the meeting are free, courtesy of Lederle Laboratories.

A REMINDER

When: March 24-27, 1958

Where: Dallas, Texas

What: The Tenth Annual Assembly of AAGP, of course,

BIG! SPECIAL! TENTH ANNIVERSARY CELEBRATION

President's Page

Another new and important "first" can soon be claimed by our Mississippi State Medical Association. Before the few remaining weeks of 1957 are passed, a new scientific research and study project of great value to all Mississippians shall have been initiated by the association.

Work has been completed on a continuing maternal mortality study by our Committee on Maternal and Child Care. It is a large and complex venture in the area of scientific inquiry involving many individuals and agencies.

To begin, the basis and criteria for such a study project were diffícut to develop. During the period 1953-1956, the American Medical Association Committee on Maternal and Child Care expended vast energies in developing a set of "Guides for Maternal Mortality Studies.' These are designed principally to promulgate uniform definitions in terminology and nomenclature and are the composite work of interested medical organizations and agencies having concern and interest in maternal mortality studies. Previously, inconsistent baselines in such studies have rendered virtually invalid the usefulness of locally conducted efforts from a national viewpoint.

At the Seattle Clinical Session of the AMA in 1956, these "Guides" were unanimously adopted by the House of Delegates. They have since been published and sufficient copies are in the hands of our association to furnish all having use for them quantities necessary.

This project is one of deep and continuing interest to me. I have had the privilege of serving for more than four years as a member of the AMA Committee on Maternal and Child Care and for three years on our own state association committee. I believe that we have never had a better committee working in this area than our present group composed of ten able, interested physicians.

The continuing study project will be one of private communication between the committee and the attending physician at a maternal death. The Mississippi State Board of Health will provide the committee with photostatic copies of death certificates in cases of suspected maternal deaths. Upon determination by the committee chairman that there is reasonable basis to suspect a maternal death within the definition of the "Guides", a brief but comprehensive data sheet will be furnished directly to the attending physician with the request for information on all circumstances surrounding occurrence of death and the condition of the patient. The committee will study these reports and case evaluations will be prepared for subsequent reporting.

The committee recognizes that certain difficulties which are first apparent in a study of this nature must be overcome and that assurances must be given in protecting the interests of all concerned. In all case studies, the identities of the patient and attending physician will be carefully and completely withheld. Only the chairman of the committee and necessary staff individuals will have access to these identifying data. The full committee itself will study cases without knowing names of patients or physicians involved.

The project is purely one of scientific research and inquiry; it is in no sense a punitive undertaking. Objective, useful, scientific data is the first and only goal of the study.

The success of this endeavor obviously depends upon cooperation from physicians throughout Mississippi. A prompt response to the committee can mean a valuable contribution to our armamentarium of knowledge in the obstetrical field. A case may seem "routine" or even insignificant to a busy practicing physician. Careful analysis, cross-comparison, inquiry, and evaluation by this highly qualified group may turn up findings of the highest significance. Reports published by the committee may point up new needs in obstetrical practice as well as to pinpoint important findings which will be useful to every physician in Mississippi.

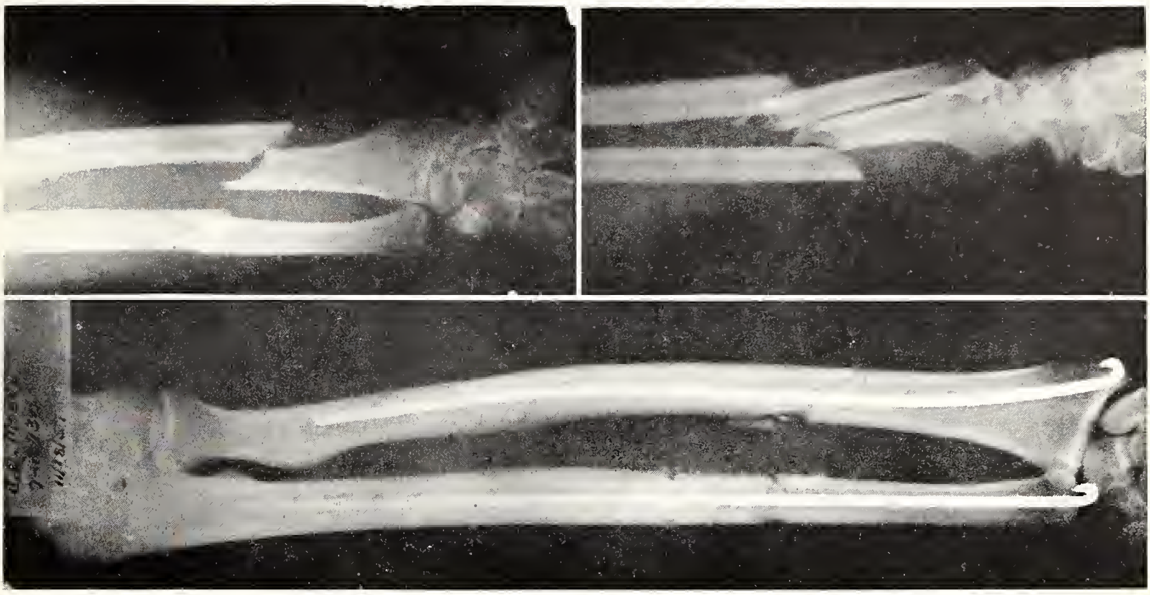
What your association is about to undertake in this research area is important. It will depend almost entirely upon response by individual physicians and their full, complete cooperation. In no sense is the project punitive in nature and all identifying information as to individuals will be carefully and discreetly withheld; the anonymity of respondents is guaranteed. The leaders of your association are fully confident that this new "first" is another strong structural member in the edifice of service your association continues to raise in Mississippi.

Howard A. Nelson, M. D.
President

FRACTURE PROBLEMS

Leslie V. Rush, M.D.
Meridian, Miss.
Problem No. 10 of a Series

THE FOREARM — PROBLEMS IN MANAGEMENT



In the above case, currently under treatment, an excellent result is anticipated. There should be complete and rapid return of function with rapid healing. This is due to many factors.

First, there is anatomical restoration with no alteration of the relative length of the two bones to produce distraction. Instead, the contact compression factor is very evident.

There is no tendency to rocking at the fracture line because of the rigidity of the pins. Rotary stress has been eliminated because fixation is stable in both bones.

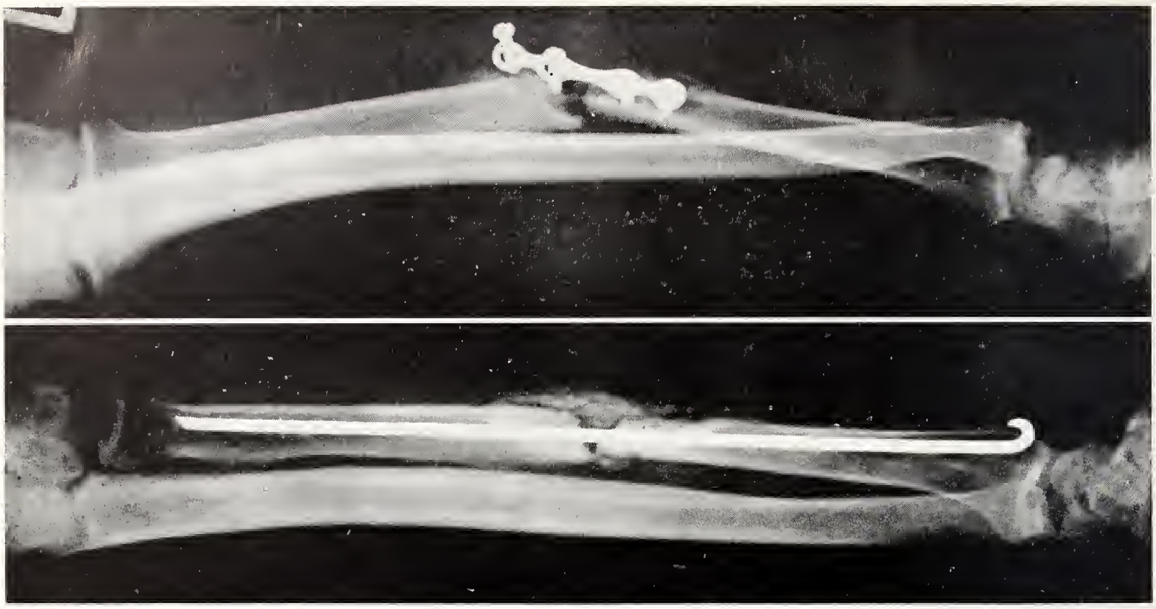
Consequently, there is no need to immobilize the forearm except for one week to encourage soft tissue healing. This is done by plaster splints with a compression dressing of elastic bandage.

After one week full active function is permitted and there should become little occasion for periarticular adhesions, edema, muscle atrophy or osteoporosis.

IN THE RADIUS observe the direction of the obliquity. The pin was introduced at a slight angle, through the styloid end, a little to the dorsum. The pin was forced into a curve in this fragment producing three-point pressure for fixation and the sled runner was forced to glide up the medial cortex. As the fracture was transfixed the sled runner glided up the medial cortex of the proximal fragment exerting a dynamic pressure firmly compressing the oblique fracture surfaces.

Had this fracture line been oblique in the opposite direction angulation with distraction would have occurred. In such an event pin should not enter the distal fragment at an angle but should be applied from the dorsum.

IN THE ULNA a straight pin was introduced through the end because the fracture surface was irregular and would lock itself against rotation. This is one of few instances where the pin is not inserted from the side of the bone; to have done so in this short fragment might have produced angulation.



TOP, Male, age 25. Non-union radius, one year's duration. Complete loss of rotation.
BOTTOM, Two months after iliac bone graft and pin fixation. Note new bone islands definitely evident in the callus.

HEALING versus FUNCTION

The problem here is both healing and function. Fixation here was but relatively stable, there being tendency to rotary stress because of the pre-existing loss of rotary function and because the bone ends were not in contact.

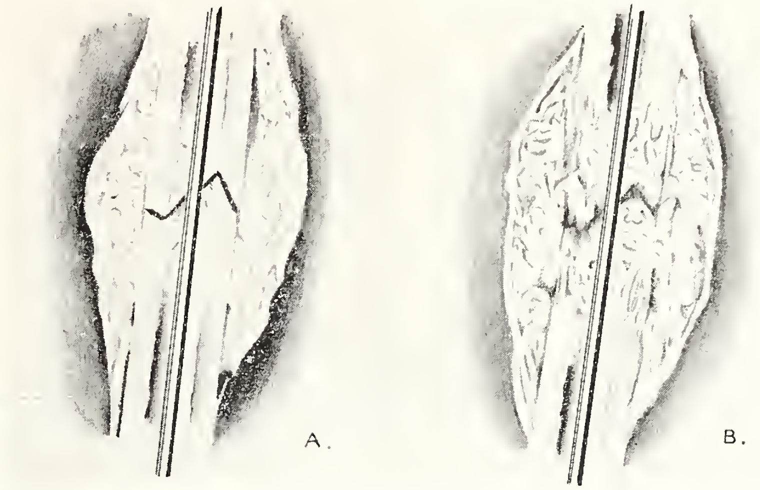
To allow the grafts to become properly seated this forearm was immobilized in plaster splints for four weeks. For the next four weeks the splints were removed three times daily for active exercise. At eight weeks full function had been regained except for fifty per cent of supination.

But the x-ray now shows good callus bridging with definite bone elements in the callus. *This is the critical period in bone healing.* Furtherattempts at motion at this stage can cause multiple repeated fractures in the callus with recurrence of the non-union. At this stage healing takes priority over function and the bone must be immobilized (or , at least, exercises must be used cautiously) until healing is secure.

CALLUS - LIKE PLASTER OF PARIS

For the first few minutes after plaster has been immersed in water it is pliable and can be molded with impunity without affecting its ultimate hardness. At this stage the formation and interlocking of crystals which is to give its ultimate hardness has not yet taken place. But once and motion at this stage seems to have little effect upon its ability to harden. But once the bone islands have appeared and begun to coalesce in the callus, motion can produce repeated fractures of the bony trabeculae with the resultant deposition of fibrous tissue which can delay or wholly prevent the formation of the new bone bridge.

Similar is the reaction of the fracture callus. In the first few weeks it is soft and pliable and motion at this stage seems to have appeared and begun to coalesce in the callus, motion can produce repeated fractures of the bony trabeculae with the resultant deposition of fibrous tissue which can delay or wholly prevent the formation of the new bone bridge.



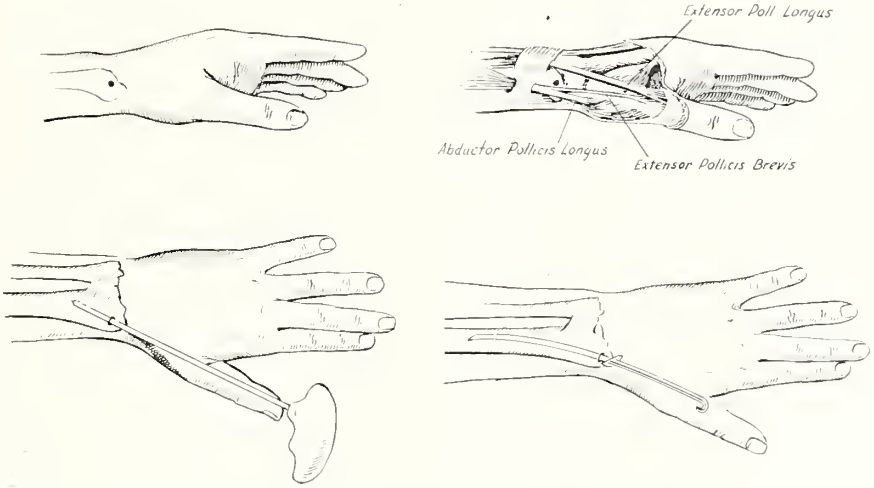
BONE HEALING

(diagrammatic)

(A) Soft callus, first few weeks. When possible, this is ideal time to restore full function. Fixation is usually more stable at this period because pin has had little opportunity to loosen from bone absorption. In irregular fracture line interlocking projections of bone are still firmly anchored to resist torque.

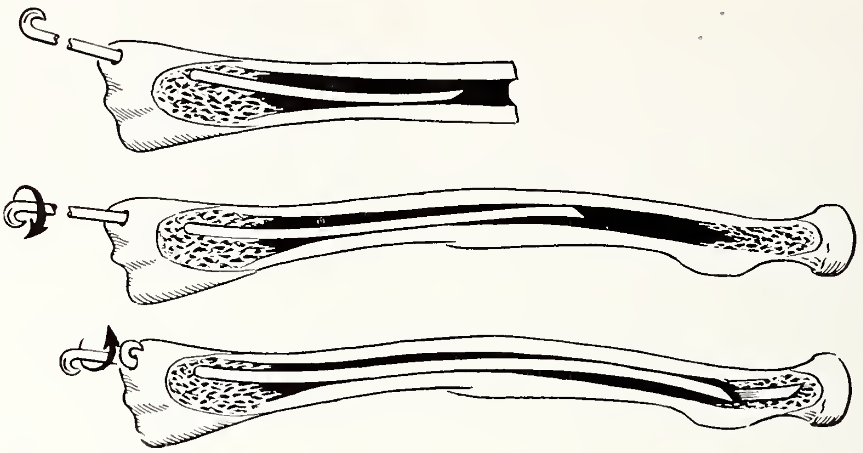
(B) After several weeks. Trabeculae of bone-forming elements are extending across the fracture line to coalesce with their fellows from the opposite side. Simultaneously there occurs rarefaction and osteoporosis of the bone ends and some bone absorption at the fracture line.

This is the critical period. Fixation at this period is less stable and if stiffness is present in a contiguous joint, motion should not be forced. It can produce rocking, shear, or rotary stress to delay healing. Persistent motion at the fracture site can produce repeated fractures of the bony trabeculae with the interposition of scar tissue into which new bone-forming elements may never appear.



INSERTING THE PIN IN RADIUS

The best point of insertion is through the anatomical snuff box. The opening should be near the articular margin and slightly to the dorsum. With short distal fragments, especially in the young, the angle of insertion must be carefully studied to prevent angulation.



GUIDING PIN IN RADIUS

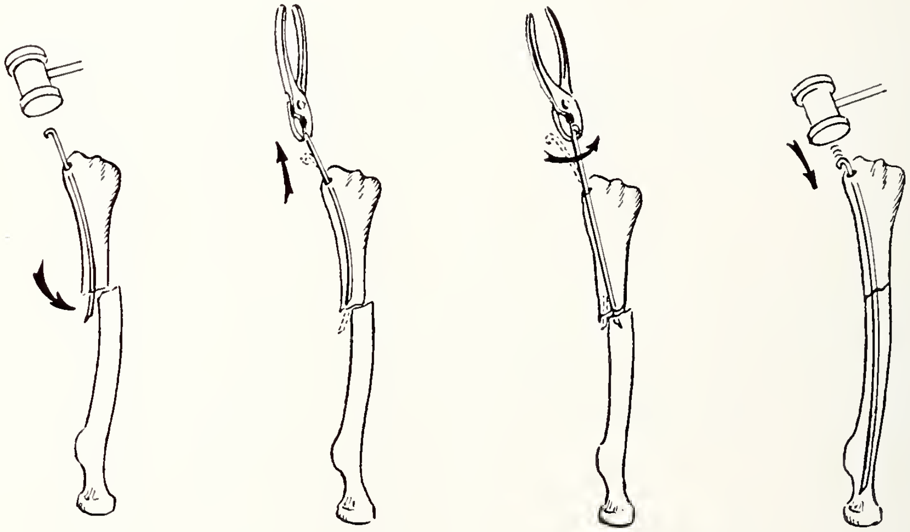
The shaft of the radius is tortuous. This permits the pin to be securely locked in the bone, but demands a certain measure of skill for its successful application.

The one-eighth-inch pin gives best fixation but occasionally the medullary canal is small and a pin three-thirty-seconds-inch diameter must be used.

The point is guided through the curves by rotating the pin with pliers as it is driven in such fashion that the point does not impinge, but rather, the sled-runner surface glides upon the curved surface of the bone.

CROSSING THE FRACTURE LINE

Occasionally complete reduction can not be accomplished or a comminuted fracture with a beveled fracture surface will deflect the point outside the bone. This can often be corrected by partially withdrawing the pin and rotating it 180 degreees with the pliers before it is redriven.



THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $3.00.

Published monthly at 104 Hospitality Street, Booneville, Mississippi. Return postage guaranteed.

W. H. ANDERSON, M.D. ....Editor-in-Chief
MILDRED P. ANDERSON .... Assistant Editor

MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY
C. W. Patterson ,M.D. ....President
Rosedale, Miss.
J. Max Roy, M.D. ....President-elect
Forrest City, Ark.
C. L. Chumley, M.D. ....Vice-President
Nashville, Tenn.
Lon E. Reed, M.D. ....Vice-President
Hot Springs, Ark.
R. B. Cunningham, M.D. ....Vice-President
Booneville, Miss.
Thurman Crawford, M.D. ....Secretary-Treasurer
Memphis, Tenn.

Mid-South Associate Editors
H. King Wade, M.D. .... Hot Springs, Ark.
R. L. Sanders, M.D. ....Memphis, Tenn.
Frank M. Acree, M.D. ....Greenville, Miss.

MISSISSIPPI STATE MEDICAL ASSOCIATION
Howard A. Nelson, M.D. ....Greenwood
President
Guy T. Vise, M.D. ....Meridian
President-elect
Geo. W. Twente, M.D. ....Jackson
Secretary
Rowland B. Kennedy ....Jackson
Executive Secretary
State Associate Editors
Louis F. Rittelmeyer,M.D. .... Jackson, Miss.
John T. Bryan, M.D. ....Meridian, Miss.

The Publication Committee is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.

Address all material for publication to W. H. Anderson, M.D., 104 Hospitality Street, Booneville, Mississippi.

WILL WE EVER LEARN?

"Modern man . . . goes through life with fear of death; who fearing death, expends his health in hypochondriacal distress; who becomes a vitamin-taking, antacid-consuming, barbiturate-sedated, aspirin-alleviated, weed-habituated, alcohol-inebriated, benzedrine-stimulated, psychosomatically-diseased, surgical-despoiled animal. Nature's highest product becomes a fatigued, peptic-ulcerated, depressed, sleepless, headachy, nicotinized, over-stimulated, neurotic, tonsilless creature."

So goes Dr. Ratner's description of an all too familiar sight in every physician's office. Of course he was talking about *patients*—surely not doctors. We're far too smart to let things like that happen to us.

But while we are on the subject, how is your health, doctor? Have you had a check-up recently? Or was it a couple of years ago? Or when you were discharged from military service?

Any haphazard approach to something as important as periodically appraising one's physical condition leaves much to be desired. This realization led members of the Kings County Medical Society in Brooklyn, New York, to take action. They selected 59 member-physicians at random and subjected them to a battery of simple laboratory tests—blood count, urinalysis, chest x-ray, and EKG. Not even a history and physical examination was done, but look at the results.

These figures represent the number of doctors *who did not know* of the presence of the condition found. Among the 59, this many were surprised to discover that they had:

Definite heart disease	10
Possible heart disease	8
Hypertension	12
Blood abnormalities	2
Recent lung disease	7
Glycosuria	1
Albuminuria	3

The lesson here is obvious. A periodic examination by your family physician is a minor inconvenience. Undetected disease can become a major tragedy. L. F. R.

DOCTORS SHOW CONCERN OVER ACCIDENTS

We congratulate the Memphis and Shelby County Medical Society on its campaign to help reduce accidental deaths, especially those caused by automobile accidents. The medical profession has done a good job patching up the injured, but it has not been active in the prevention of these injuries.

Accidental deaths are taking a toll of 100,000 lives each year. averaging an age of 46 years. Injuries by accident reach the ten million mark. Prevention of these deaths and injuries constitutes a great challenge to the medical profession. The automobile is responsible for the greatest number. Memphis doctors think that education and courtesy will do most to provide the answer. It is possible to prevent every death from accident. Yet the problem is many-faceted. Keeping the car in prime condition is important, but the driver holds the master key to the problem. He needs to be physically alert, and he needs the right mental attitude. He must have a regard for his fellow highway traveler and be consistent about it. He must see the accidental death problem as a personal challenge and dedicate his efforts to solve it.

"HAVE AN UNFINISHED TASK"

The Alumni Association of Tulane University has prepared a salute to the memory of Dr. Matas. In this exquisite little treatise we note the following from the pen of the maestro:

"I have frequently been asked how I managed to accumulate so many years. They say to me, 'Why, Doctor, you look so well.' To this I reply that the thing to do is just to keep right on; to keep the flame of your enthusiasm well fed; to mix merry laughter with earnest labor; always to have some unfinished task, which must be neither too much for your strength nor too urgent. To kill time is murder in the first degree."

It is easy to look back and see that Dr. Matas lived this philosophy. We would all do well to keep this advice before us. It no doubt served a great versatility.

With all his learning, his magnificent intellect, his genius with the scalpel, his knowledge and wisdom and honor, he was a man of great understanding, patience, kindness, willingness to help and inspire all who came his way. Just how long we should reckon the age of Dr. Rudolph Matas we can not say, but long live the atmosphere he engendered in New Orleans, and may we all cherish his memory as one of medicine's brightest stars.

DR. WILSON CHAIRMAN OF SMA SECTION

Dr. Harwell Wilson of Memphis was elected chairman of the Section on Surgery of the Southern Medical Association at the fifty-first annual meeting held in Miami in November. Dr. Wilson, who is professor of surgery at the University of Tennessee, will preside oveer the Section at the annual meeting to be held in New Orleans in 1958.

The Southern Medical has no honor too big for Dr. Wilson. He is worthy and well-qualified. As professor of surgery in the largest medical school in the nation, he is bringing honor and distinction to this great institution.

DR. BOSWELL RESIGNS

Dr. Henry Boswell has resigned his post as head of the Sanatorium, and Dr. Clyde Watkins accepted the superintendency of this institution which Dr. Boswell has served about forty years.

During these past four decades the death rate for tuberculosis has dropped to a remarkably low figure. The educational program through this institution under his direction attained a high degree of effectiveness. Dr. Boswell and the Sanatorium have been well and favorably known in the fight against tuberculosis around the world.

Dr. Boswell, a great organizer, a man of superior executive ability, and an able financier, furnished a remarkable service from the standpoint of state economy. His devotion to duty is not excelled. His interest in his patients has been keen and sincere and his mental acuity in a class to itself. He inspires loyalty in his staff and activates a spirit of service.

Dr. Boswell, a master in public relations, especially with the lawmakers, adhered to a strict code of handling public funds and sought at all times to obtain value received for public funds expended. As a doctor he possesses medical integrity, a fine sense of human values to match the assets of a model physical plant. His services in the field of tuberculosis will continue to flow down the current of Mississippi health.

DR. J. O. CRIDER

In the march of medicine in Mississippi, Dr. J. O. Crider rendered a laudable service. He was dean of our two-year medical school for a number of years, and he was an instructor in physiology. For mental honesty Dr. Crider was exemplary. He loved truth, demanded thoroughness, and was a courtly scholar, friend of the aspiring student, and coopertive confrere. Indeed, a great man in Mississippi medicine has passed on.

News and Comment

MISSISSIPPI TO HOST ACS SECTIONAL MEETING

Mississippi will be host on January 16, 17, and 18, to a three-day sectional meeting of the American College of Surgeons. The meeting will bring surgeons from most of the southeastern United States, sessions to be held at the Hotel Heidelberg.

Eminent out-of-state essayists and panelists who will appear on the program include:

Alabama—Dr. John M. Howard,Birmingham;Dr. Champ Lyons,Medical College of Alabama.

Arkansas—Dr. James W. Headstream, University of Arkansas School of Medicine, Little Rock.

Georgia—Dr. William H. Moretz, Medical College of Georgia.

Florida—Dr. John J. Farrell, University of Miami School of Medicine.

KENTUCKY—Dr. Rudolf J. Noer, University of Louisville School of Medicine; Dr. Hugh B. Lynn, University of Louisville School of Medicine.

LOUISIANA—Dr. Daniel C. Riordan, Tulane University School of Medicine; Dr. Howard Mahorner, Louisiana State University School of Medicine; Dr. Alton Ochsner, Tulane; Dr. Albert Segaloff, Tulane; Dr. Oscar Creech, Tulane; Dr. Dean H. Echols, Tulane; Dr. Conrad G. Collins, Tulane.

MINNESOTA—Dr. James M. Waugh, Rochester, the Mayo Clinic.

OHIO—Dr. Robert M. Zollinger, Columbus, Ohio.

TENNESSEE—Dr. James N. Etteldorf, University of Tennessee College of Medicine; Dr. Cyrus C. Erickson, University of Tennessee; Dr. Robert A. Knight, University of Tennessee.

SOUTH CAROLINA—Dr. Edward F. Parker, Charleston, Medical College of South Carolina.

VIRGINIA—Dr. David M. Hume, Richmond.

TEXAS—Dr. Vincent P. Collins, Houston, Baylor University School of Medicine.

Dr. William L. Estes, Jr., Bethlehem, Pa., president of the American College of Surgeons, will also be a guest.

Dr. J. Harvey Johnston, Jackson, is chairman of arrangements. Drs. Willard H. Parsons, Vicksburg, T. E. Ross, Hattiesburg, George Twente, James D. Hardy, Curtis P. Artz, Thomas H. Blake, J. Harold Conn, Robert D. Sloan, John R. Snavely, W. Alton Bryant, Dean David S. Pankratz, Fred Allison, Watts R. Webb, Temple Ainsworth, Warren N. Bell, Robert B. McLean, Michael Newton, Jackson, are Mississippi members appearing on the program. Mr. Hodding Carter, Greenville, will be the Friday evening dinner speaker.

All members of the Mississippi State Medical Association are cordially invited to attend.

DR. WEST HEADS SOUTHERN

At the conclusion of the fifty-first annual meeting of the Southern Medical Association in Miami Beach, Fla., the past month, Dr. W. Kelly West of Oklahoma City, Okla., was installed as president, Dr. Milford O. Rouse, Dallas, Texas, president-elect; Dr. Edwin Lawson, New Orleans, La., first vice-preesident; and Dr. Donald F. Marion, Miami, Fla., second vice-president.

Future SMA meetings are scheduled as follows:

1958—New Orleans, La., November 3-6
1959—Atlanta, Ga., November 9-12
1960—Baltimore, Md., November 13-17
1961—Dallas, Texas, November 13-16
1962—Miami Beach, Fla.,

PREVIEW OF THE 1958 MLA MEETING

The fifty-seventh annual meeting of the Medical Library Association will be held in Rochester, Minnesota, from June 2 through June 6, 1958, with headquarters at the Hotel Kahler. The theme of the Rochester meeting will be "Advances in Medical Library Practice." Mr. Thomas E. Keys, librarian of the Mayo Clinic, is convention chairman and letters of inquiry should be addressed to him.

It will be possible for each participant to take four courses during the day, two in the morning and two in the afternoon. Each session will be one and one-half hours in length, the hour for a prepared lecture and a half hour for a discussion period.

Among the highlights of the regular program will be a panel discussion on what the medical specialists expect from the medical library. Speakers will be from the Mayo Clinic staff. A one-day trip is being planned to Minneapolis and St. Paul with visits to the University of Minnesota, the James J. Hill Reference Library and the Ramsey County Medical Library.

SPEECH CLINICS

The Mississippi Society for Crippled Children and Adults opened a speech clinic at 754 North State Street, Jackson, in September. The therapist, Miss Carolyn Powell, formerly acting director of the Speech and Hearing Clinic at the University of Mississippi, works in Jackson three days each week—Lexington, Tuesday at the VFW Hut, and Yazoo City, Thursday at the Health Department. All types of speech and hearing problems are served with the exception of the profoundly deaf. There is no restriction on age. White and colored are served in Yazoo City and Jackson, white only in Lexington. There is no geographical limitation for the Jackson center; Lexington and Yazoo City give priority to cases from Holmes and Yazoo Counties, respectively. The fee is $2.00 per session for those financially able to pay. Applicants are admitted only upon medical examination and referral.

This service, as well as all programs conducted by the Easter Seal Society, is operated under policies governing admission, discharge and standards of professional personnel approved by the Committee on Medical Service of the MSMA.

MID-SOUTH POSTGRADUATE ASSEMBLY

Just around the corner is the Mid-South Postgraduate Medical Assembly to be held at the

Peabody Hotel in Memphis, February 11-14. Dr. C. W. Patterson of Rosedale is the president. Dr. Harwell Wilson of Memphis, chairman of the program committee, assures a splendid program.

Mark your calendar and make your hotel reservation.

HOSPITAI PATIENT PICTURE CHANGING

The North Carolina Health Conference from recent research has come up with some interesting observations:

The highest rate of admissions to hospitals came from thosee who had prepaid hospital insurance, Blue Cross subscribers admitting 152 per 1,000 for the year, against 118 per 1,000 of those not having insurance.

Blue Cross patients spent 6.1 days compared to 6.5 days for North Carolina in general, and 7.7 for the United States average.

Admission rate and stay in hospitals is longer after people pass 65 years of age. Men past 65 have almost doubled the last 20 years. It is estimated that the patient past 65 costs nearly three times as much as the one under 65.

The conclusion of this research is that hospital expansion must keep up to accomodate a growing and an aging population.

ANNOUNCMENTS

The Bureau of Old-Age and Survivors Insurance, Social Security Administration, has announced vacancies for full-time and part-time Medical Consultants in its Division of Disability Operations. The Division is responsible for making determinations of disability under the disability insurance provisions of the Social Security Act. These positions are available in the headquarters offices in Baltimore, Maryland.

The full-time positions are under Civil Service and incumbents will receive all Federal Civil Service benefits such as retirement, life insurance, and vacation and sick leave privileges. The salary range is $10,065 to $11,395 a year, depending on the individual's qualifications. The salary in part-time positions is paid on a per diem basis.

These positions, in Baltimore, Maryland, afford excellent opportunities for participation in clinical work and study in the city's nationally recognized hospitals.

Physicians interested in either full-time or part-time positions may write to Dr. Arthur B. Price, Chief Medical Consultant, Division of Disability Operations, 200 West Baltimore Street, Baltimore 1, Maryland, for further information.

M. Beckett Howorth, Jr., M. D., announces the opening of his office for the practice of surgery. Suite 208M, Physicians and Surgeons Building, 899 Madison Avenue, Memphis, Tenn.

Emmett R. Hall, M. D., and Vonnie A. Hall, M. D., announce with pleasure the association of Joseph O. Priestley, M. D., in the practice of dermatology, 1403-1407 Exchange Building, Memphis 3, Tenn.

DR. J. O. CRIDER

Dr. J. O. Crider, 75, former dean of the University of Mississippi Medical School, died in Greenwood Leflore Hospital November 4 following a heart attack.

Services were conducted from the Wilson and Knapp funeral chapel with burial in the Odd Fellows cemetery.

Dr. Crider, a native of Harrisonburg, Va., was graduated from the School in 1912 and became associated with the University of Mississippi a few years later. He served as instructor and professor and assistant dean from 1916 to 1924 when he was named dean, relinquishing that position in 1930 to go to Jefferson Medical College in Philadelphia as dean. He retired in 1953.

His wife, Mrs. Susan DeLoach Crider, survives.

BOOK REVIEW

History of the Louisiana State Medical Society, by Rudolph Matas, M.D., two volumes, 252 pp. and 272 pp. Hope Haven Press, Marrero, La.

This little two-volume 1957 first edition of the Rudolph Matas *History of the Louisiana State Medical Society* assumes an immediate and unique value when one sees who is the author.

Miss Mary Louise Marshall edited the first volume and Mrs. Hathaway Aleman edited the second.

This history of medicine in our neighboring state is freighted with value. Romance, drama and literary excellence grace the pages and lives of New Orleans' and Louisiana's men of medicine for more than a century. No other person knew or could assemble and appraise the merits of these actors in a moving drama as could Dr. Matas.

The history of medicine has been the history of the lives and times of men and organized effort. The life-span of the author of this history shared most of its contents and brought out many little known but lustrous facets to medical achievement.

Dr. Matas created the Rudolph Matas Trust Fund. Dr. Isidore Cohn is chairman of the committee which published the two-volume history. J. A. Majors Book Company is the sales agent. Dr. Cohn was the right arm of Dr. Matas in medicine for many years. Surely many doctors in Mississippi, as well as the other Southern states will want these little volumes for their library.

The Diagnosis and Treatment of Urethral Diverticulum In the Female[*]

RICHARD G. BURMAN, M.D.,
Gulfport, Mississippi
MAJ. HARRY G. CEPHA, USAF, (M.C.), and EVERETT M. McGAUGHEY, M.D.
New Orleans, Louisiana

IT IS THE purpose of this paper to call attention to urethral diverticulum in the female and review the symptoms, diagnosis, and treatment of fifteen cases managed on the Tulane Gynecological Service at Charity Hospital of Louisiana at New Orleans from July 1, 1954 to July 1, 1956.

The subject of urethral diverticulum in the female is discussed very little in textbooks and didactive lectures. TeLinde, in *Operative Gynecology,* second edition 1953, uses three pages and illustrates a technique of surgical excision. Crossen, *Diseases of Women,* tenth edition 1953, a more typical classroom textbook, devotes nine lines to the subject. The earliest description of diverticulum of female urethra is to be found in William Heys' *Practical Observations in Surgery,* published in London in 1803. His first case was treated in 1786. Foucher reported the second case in 1857, and the third case was reported in 1867. Shortly after Heys' original report, Sir Charles Clarke in *Diseases of Females* (London, 1814) made the following observation of diseases of females which are attended by discharges, "Sometimes a pouch forms in the posterior part of the urethra in which a few drops of urine lodge and from which situation it may be pressed out by the finger applied to the part". Beginning in 1931 there was an increasing flow of papers in this country. Multiple cases were reported rather than individual ones. Hunner presented fifteen cases, three with calculi. In 1954 seventy cases were reported from the Mayo Clinic, sixty-three from Johns Hopkins, 1931 to 1954, and forty-five from Cleveland Clinic in 1954. The University of California presented two cases prior to 1936 and then nine more in one year. Nevertheless, there are many women with chronic gynecological and urological complaints who probably have a urethral diverticulum as the basic pathology.

ETIOLOGY

The etiology of diverticulum is debated. Krieger and Poutasse of the Cleveland Clinic rightly state the case by saying "the precise etiology is an academic question, while the recognition and proper management of the abnormality is of primary importance". Suffice it to say then that whether acquired or congenital, urethral diverticulum can either be caused by infection of the urethral glands such as Skene's or the peri-urethral glands so exactly and minutely described by Huffman; instrumentation of the urethra; trauma of childbirth; secondary to urethral stricture; secondary to urethral calculi; or in the blind pouch of an accessory ureter. All the pathological specimens are characterized by inflammatory reaction and it is felt that most do not give symptoms until they are infected. Therefore, using the cell structure of the sac to identify its origin histologically is of little avail as severe and chronic infection destroys the epithelium. In the series reviewed, ten showed chronic inflammation and in only six could the epithelium be identified.

AGE, RACE, AND PARITY

	No. of Patients	
RACE		
White	3	
Negro	12	
		15
AGE		
20 - 30	2	
30 - 40	9	
40 - 50	2	
50 - 60	2	
		15
PARITY		
Nulliparous	2	
1 - 3	5	
4 - 7	3	
8 - 12	3	
		15

Table 1. Distribution by Race, Age, and Parity.

Urethral Diverticulum in the Female, Tulane Unit, Charity Hospital at New Orleans, July 1, 1954 - July 1, 1956.

---

[*] Presented before the Section on Obstetrics and Gynecology at the eighty-eighth annual session of the Mississippi State Medical Association, Jackson, Miss., May 14-16, 1957.

[†] From the Department of Obstetrics and Gynecology, Tulane University of Louisiana, School of Medicine, and the Division of Obstetrics and Gynecology, Tulane Unit, Charity Hospital of Louisiana at New Orleans. Louisiana. Aided by the Ex-resident and Fellows Research Fund for Obstetrics and Gynecology.

Fifteen cases are presented and twelve are of the negro race and three are white. Their ages are from twenty to fifty-seven with two between twenty and thirty; nine between thirty and forty; two from forty to fifty; and two between fifty and sixty.

It is not necessary to suffer trauma from childbirth to have a urethral diverticulum as two of the patients were nullipara; five had one to three children; three had four to seven siblings; and three had given birth to over seven. (Table I.)

SYMPTOMS

The discussion of symptoms of urethral diverticulum in the female can be unlimited. The multiplicity of complaints is varied and in studying series of cases we find this to be true in all the reports reviewed. When one stops and realizes the location of most diverticula, it is anticipated that the complaints will generally be confined to the urinary tract or the vagina and the pelvis, or a combination of both. It is for this reason that so many patients seek the gynecologist for relief. In summarizing the fifteen cases in this series, we find that the two most common complaints are stress incontinence and post-micturition dribbling. Two-thirds of our patients had these symptoms. This differs from that found at Johns Hopkins by Wharton and TeLinde where dysuria was the most common symptom as it was found in two-thirds of the cases in their series of sixty-six patients treated from 1931 to 1954. Krieger and Poutasse also listed dysuria as the most common complaint in the series from Cleveland. Gilbert and Cintron listed dyspareunia as the chief complaint in a group of patients treated by them in Puerto Rico. In our series we find dysuria in seven patients and dyspareunia as the chief complaint in only one. Other symptoms stressed by the patient are as follows: pruritis vulvae, desire to urinate during coitus, and a sense of urinary bladder pressure. Only two patients noticed a mass. It is noteworthy that eleven patients gave a history of previous urinary tract infection. (Table 2.)

	No. of Patients
Post Micturition dribbling	10
Dysuria	7
Enuresis	1
Hematuria	2
Suprapubic pain	1
Dyspareunia	1
Stress incontinence	10
Desire to urinate during coitus	1
Patient noticed mass or pus	2
Vaginal discharge	4
Pruritis vulvae	2
Urinary Tract Infection:	
(a) While pregnant	6
(b) While not pregnant	5

Table 2. Symptoms and History.

In practice, it is frequently found that patients consult several physicians and are treated with little results from repeated urinary tract infection and the complaints noted. The duration of complaints extended over a ten-year period. Only two patients had histories of one year or less. This is in keeping with time elements recorded in other series reviewed.

DIAGNOSIS

The diagnosis of urethral diverticulum can be divided into four main headings: history, physical examination, urethroscopic, and urethrography. The symptomatology has been discussed in the preceding paragraphs and its importance is apparent. The physical examination reveals findings that are very definite. A sub-urethral mass can be demonstrated in nearly all cases. This can either be seen or felt by running the finger along the anterior wall of the vagina and noting the sensation of thickness. The size of the mass varies to the extent that in this series nine were estimated to be two by two centimeters, only two by four centimeters, only three by six centimeters, and one five by five centimeters. In only two cases were the patients themselves cognizant of the mass.

One of the most characteristic findings after the mass has been identified is the appearance of pus and or urine when the enlargement is milked toward the meatus urethra. This is accomplished by holding the labia with one hand, inserting the gloved index finger of the opposite hand along the course of the thickening or more directly on the mass and exerting gentle pressure. Invariably pus and or urine will appear at the meatus urethra. Occasionally gravel or small calculi will be palpated or expressed by this method producing a typical "chicken craw" sensation. This occurred in one case. In only two cases of the fifteen were we unable to express pus or urine and demonstrate it at the external opening. On examination of the urine, pus was found in only nine of the fifteen cases and from the urine only six showed positive cultures. E. Coli, Staphylococcus Aureus, and Aerobacterin were the organisms identified.

The McCarthy endoscope is a useful instrument in examining the urethra for openings. Frequently more than one opening is visualized and occasionally no inlet is seen at all. The location of the opening is usually on the floor or in the lateral wall of the urethra and can be in any portion of its length. Generally, it is found in the middle and posterior thirds of the urethra. Milking the urethra as the scope is withdrawn frequently reveals previously undisclosed openings as the pus or urine is seen coming out of the small orifices.

Urethrography is being used more and more by the various investigators. The development of special catheters has made this type of investigation easier and more efficient. Previously, it was necessary to improvise by using a Foley type catheter, cutting and ligating the end distal to the balloon and cutting an additional opening approximately one centimeter proximal to the balloon. It was then necessary to hold the meatus firmly against the catheter while injecting radio-opaque material to fill the diverticulum satisfactorily so x-rays could be made. W. M. Taylor is given credit for the development of this method. More recently the double balloon or Trattner catheter has been devised and was used in our investigations. (Figure 1.) This is a three-way catheter with an inflatable balloon on the distal end and this is used to seal the urethra at its origin in the urinary bladder. There is an opening proximal to the balloon and the radio-opaque material (salpinx is ideal) is allowed to escape into the urethra in this manner. There is a fixed proximal balloon which is used to tamponade the meatus. The Trattner catheter has the disadvantage that if the urethra is too long or too short, it will not fit well. More recently Davis described a method of positive pressure urethrography using a catheter with a sliding balloon and uses the principle of Taylor who originally described the method of preventing bladder reflux. (Figure 2.) The catheter devised by Davis has the addition of the sliding balloon to hold the catheter in place and tamponade the meatus as well as the vesical sphincter and is adjustable to all lengths of

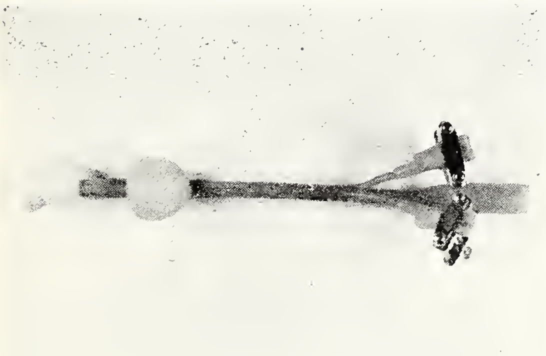


FIGURE 1. The Trattner Catheter.

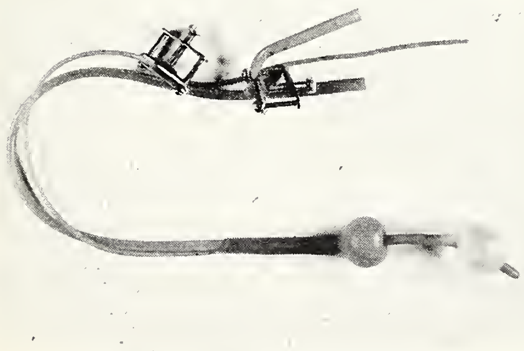


FIGURE 2. The Davis Catheter.

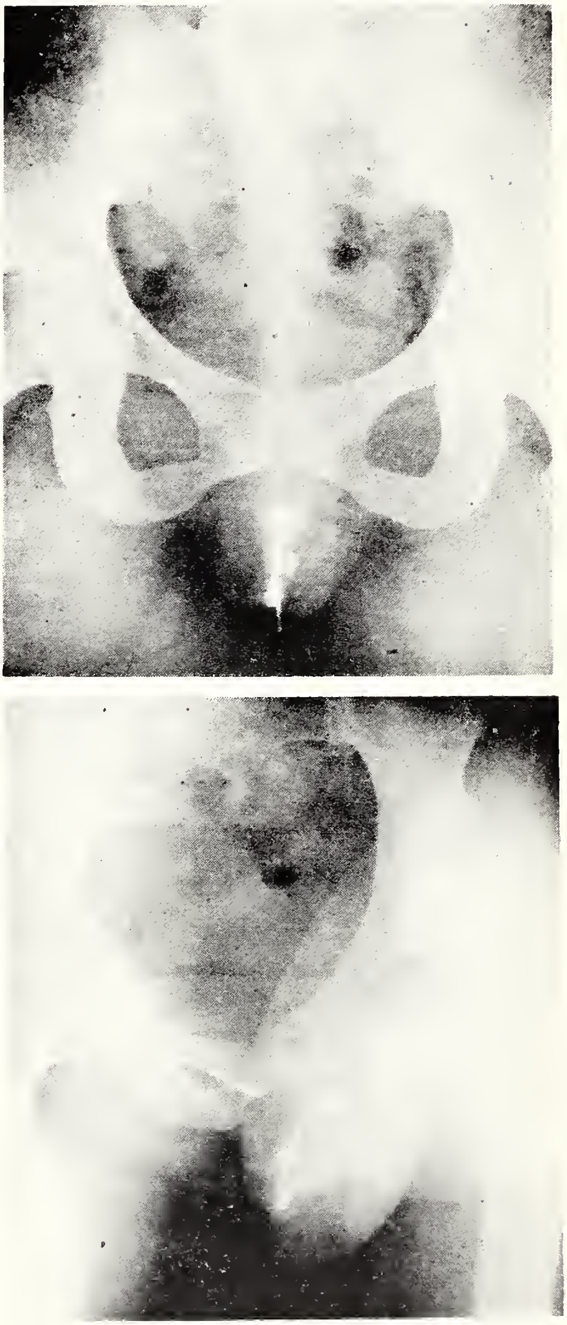


FIGURE 3, a, b. Urethrograms.

urethra. It also allows a moderate amount of positive pressure to be applied in instilling the media. This permits a thorough investigation of all sinuses, openings, sulci or crevices of the urethra by x-ray visualization. Davis recommends umbadil viscous-U, a water soluble medium for use with his method. Both the Trattner and Davis catheters are available through Bard at Summit, New Jersey.

It is felt that the utilization of the above combination of methods, namely, history, physical examination, urethroscopy, and urethrography will generally reveal suspected diverticula in the female urethra. We consider the newer methods of urethrography as being the most efficient way to diagnose diverticulum from other confusing pathology such as urethrocele, sub-urethral cyst, Gartner'sduct cyst, Skene's cyst or abscess of Skene's gland, diverticulum of the bladder, varicosities and endometrioma of the sub-urethral planes. The differential diagnosis is thus made a little more easy. (Figures 3 a and b, 4 a and b.)

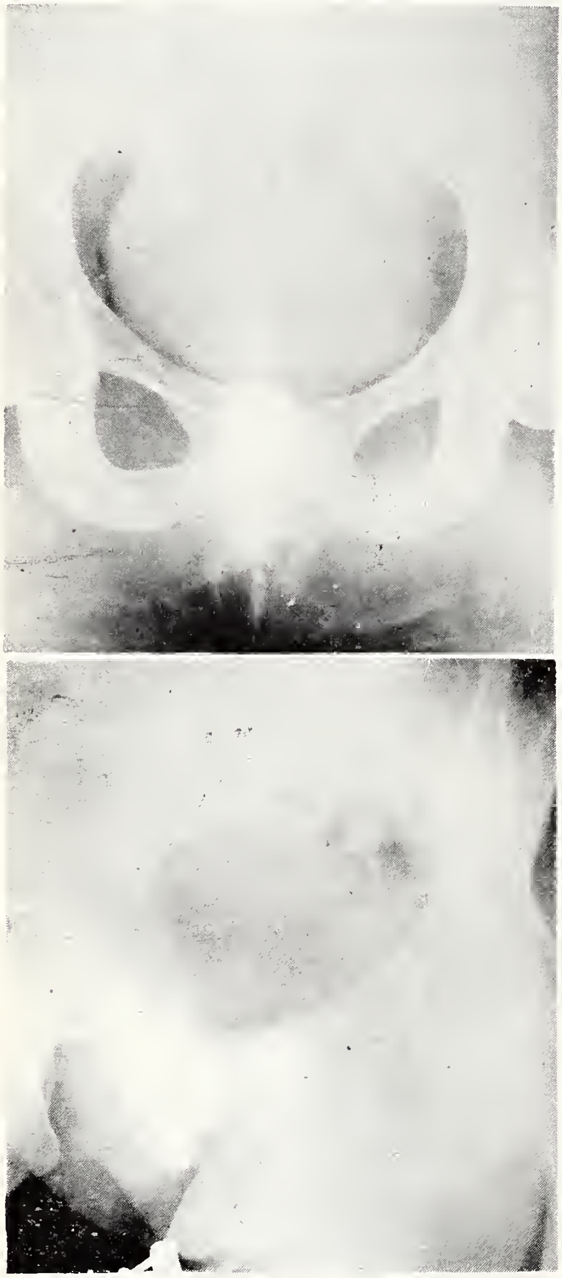


FIGURE 4, a, b. Urethrograms.

TREATMENT

The treatment of urethral diverticulum is dissection and excision of the sac and repair of the urethra and anterior vaginal wall. This is the accepted method of treatment in most clinics. There have been numerous variations reported from time to time but fundamentally all are accomplishing the above named principles of excision and repair.

Urinary tract infection can be treated prior to surgery with the appropriate chemotherapeutic agent or antibiotic, however, it is difficult to sterilize the diverticulum but rarely does this present any operative or post-operative difficulty.

On the Tulane Unit, the technique of excision and repair is utilized as described by Collins in 1946. An incision is made through the anterior vaginal mucous membrane just below the urethral meatus in the midline and as far posteriorly as is necessary. The mucous membrane and attached pubo-vesical-cervical fascia is dissected laterally on either side. The diverticulum is identified and opened in its longitudinal axis. We feel that it is essential to open the sac as it affords the exposure necessary to visualize all inlets into the urethra as there are frequently more than one communication to the urethra. A sound or large catheter is placed in the urethra thus delineating its boundaries. The sac is incised completely, leaving the resulting defect or defects in the urethra clearly visible. (Figure 5 a, b, and c.) The urethral wall is closed over the sound with No. 000 chromic catgut interrupted sutures. Suturing and closing over the metalic sound helps prevent stricture and narrowing of the urethra. The remaining repair is the same as for an anterior colporrhaphy. The pubo-vesical-cervical fascia is closed with interrupted sutures either mattress or Kelly type using No. 00 or No. 000 cotton suture material. The excessive vaginal mucous membrane is excised and closed with interrupted No. 000 chromic catgut suture. (Figure 5 d.) A Foley catheter is placed in the urinary bladder and al-

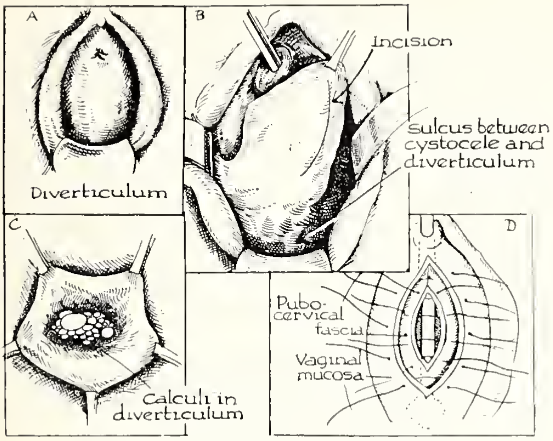


FIGURE 5. Urethral Diverticulum

lowed to stay from four to seven days. The specific therapy is continued and the patient allowed to be ambulatory.

Occasionally the nulliparous individual is encountered where exposure is limited. This also occurs with the elderly patient. The operative field can be enlarged by utilizing an episiotomy.

It is possible that other operative procedures can be accomplished at the same time as excision and repair of the urethral diverticulum. Five patients in this group had a vaginal hysterectomy and three had additional plastic repair of the vagina. None of these procedures complicated the urethral surgery.

RESULTS

The results of this procedure are usually very gratifying to both the surgeon and the patient. When one realizes that to have post-micturition and post-coital dribbling relieved, his results can be fully appreciated. In this series there were no complications. Incontinence and fistula formation have been reported but with meticulous repair of the layers involved, this is a rare complication. The greatest residual measured postoperative and after removal of the catheter was fifty cubic centimeters and all signs of infection in the urine disappeared with the completion of healing. In one case, the catheter had to be re-inserted. The average length of time that the catheter remained in place was 6.2 days. This is a little longer than most series reported and is due in all probability to variations in each patient. It is felt that five days is the optimum time for the catheter to be left in. Usually at the end of five days the catheter can be removed and continuous emptying of the bladder follows and the residual urine is minimal.

CONCLUSION

1) Fifteen cases of urethral diverticulum have been presented.
2) These cases were diagnosed and treated during a two year period on the Tulane Gynecological Service of Charity Hospital of Louisiana at New Orleans.
3) Diagnosis is made by history, physical examination, urethroscopy, and urethrography.
4) Two methods of urethrography have been described. This is the most efficient means of definitive diagnosis.
5) Preliminary treatment or therapy can be carried on with appropriate specific antibacterial treatment either chemotherapeutic or antibiotic.
6) Excision and repair is the method of treatment and the technique has been described.
7) The results in this series are excellent and the same results can be expected by following the above or a similar plan of diagnosis and treatment.

BIBLIOGRAPHY

1. TeLinde, R. W., Operative Surgery, 2nd Edition, 1953. J. B. Lippincott Company, Philadelphia.
2. Crossen, R. J., Diseases of Women, 10th Edition, 1953. C. V. Mosby Company, St. Louis.
3. Pinkerton, J. H., Journal of Obstetrics and Gynecology British Empire, 63; 1, P 76-78, February 1956.
4. Hunner, G. L., Urol. and Cutaneous Review. 42:336, 1938.
5. Gilbert, C. R., and Cintron, F. J., Americal Journal of Obstetrics and Gynecology, 67:616, 1954.
6. Krieger, J. S., Jr., and Poutasse, E. F., Americal Journal of Obstetrics and Gynecology, 7:503. May 1956.
7. Wharton, L. R., Jr., and TeLinde, R. W., Obstetrics and Gynecology, 7:503, May 1956.
8. Huffman, John W., A. M. A. Arch. Surgery, 62:615, May 1951.
9. Collins, Conrad G., Surgery Clinics Nor. Am., page 1221. Saunders and Company, Philadelphis, October 1946.
10. Edwards, E. A., and Beebe, R. A., Obstetrics and Gynecology, 5:729, June 1955.
11. Davis, H. J., Journal of Urology, 75:753, April 1956.
12. Brocato, Joseph M., Private Communication.
13. Brocato, J. M., and Bradley, T. J., Journal of Louisiana State Medical Society, 109:85, March 1957.

DISCUSSION

Dr. Frank G. Gruich (Biloxi) — Dr. Burman has given us an excellent paper on a subject affecting the female urethra. Many believe this to be a relatively rare condition, however, in order to make the diagnosis of urethral diverticulum, the possibility of its presence should be kept constantly in mind.

It is true that most modern textbooks fail to give us a good description on this subject, however, in recent months the specialty journals in obstetrics and gynecology, urology and general surgery have given us some excellent papers.

He has covered the historical aspects, etiology, symptomatology and treatment so well, that I would add only that occasionally the history might suggest the possibility of a urethral diverticulum when none can be found on examination, because it is collapsed and empty of all contents. Re-examination at the time of acute symptoms may then reveal the sac.

If time permits, I would like to ask Dr. Burman the following questions: 1. Do you advocate removal of the asymptomatic diverticulum? 2. From your paper, after the defect is closed in the urethra, you complete the repair with a non-absorbable suture to the vagina mucosa. Does this cause any dyspareunia, or any fistula formation? 3. In those having a large opening between the urethra and diverticulum, do you change your technique?

Dr. H. W. K. Batson, (Brookhaven) — The diverticulum of the female urethra is an entity which will be found more frequently if a search is made for it.

Etiologically it is probable that better than 90 per cent may actually be traced to previous peri-urethral abscess.

The symptoms vary and are not specific.

It is emphasized that either a large panendoscope or an endoscope is mandatory for inspection of the female urethra, and a careful search must be made in any woman who presents bladder symptoms. There may be multiple openings into the diverticulum from the urethra. Ignorance of this feature may lead to a recurrence or to the formation of a fistula.

I would like to ask how many of the diverticula in the series presented failed to visualize by the method of urethrography described.

The direct method of excision and repair described by Dr. Burman produces good results. The use of cortisone preoperatively to reduce associated induration may be efficacious in facilitating surgical dissection and repair. It is frequently advisable and necessary to combine an excision of a urethral with other vaginal surgical procedures. This may be done with desirable results.

Sickle-Cell Retinopathy*

JULIAN E. BOGGESS, M. D.
Columbus, Mississippi

Retinal hemorrhages, whether they be unilateral or bilateral, preretinal or intraretinal, are not a disease in themselves but a manifestation of many diseases. The causes of intraretinal and preretinal hemorrhages are many and varied. They may be due to trauma, obstruction, toxic states, retinal inflammation, nephritis, hypertension, diabetes, eclampsia, arteriosclerosis, blood dyscrasias and other factors not yet determined.

Eales' disease, for example, is described as a recurrent intraocular hemorrhage of unknown cause, usually in young men of apparently good health. Coats' disease is another example of the confusion regarding the etiology of retinal hemorrhages. It was for a time accepted as a clinical entity, but now it is known to embrace a considerable number of conditions. Disciform degeneration of the macular, to mention one variation, is probably a localized form of Coats' disease, although it isn't commonly considered as such. Circinate degeneration is probably related to Coats' disease, for pathologically it is due primarily to hemorrhages occurring in the outer plexiform layer.

It is not inconceivable that some cases of Eales' disease or Coats' disease have readily determinable etiologies not currently considered if one only looks for them. In the routine investigation of an individual patient with retinal hemorrhages, sickle-cell preparations, to my knowledge, have never been advocated. Only in cases of anemia might it have been considered, and only then if the patient was a Negro.

Sickl-cell disease need not be associated with an anemia to produce pathology. The hemoglobin and the red cell count may be normal and yet a painless hematuria or splenie infarct may occur. Also it is now questionable whether the disease is limited to the Negro race. Dr. L. W. Diggs has good evidence that the disease may occur in a pure Caucasian, although it is admittedly a rarity.

---

*Presented before the Section on Eye, Ear, Nose, and Throat, at the eighty-eighth annual session of the Mississippi State Medical Association, Biloxi, Mississippi, May 14-16, 1957.

Much new information about sickle-cell disease has been obtained in the past eight years. In 1949, Pauling discovered that sickling was due to an abnormal arrangement of the hemoglobin molecule. Following this, twelve different hemoglobins were discovered. These are: A normal, S sickle, F fatal, and nine others lettered from C through P. Certain of these, or combinations of these, are responsible for certain disease states.

Sickle-cell trait occurs in seven to nine per cent (one in twelve) of American Negroes. Sickle-cell anemia occurs in about one out of every six hundred American Negroes. When hemoglobin (S) is combined with another abnormal hemoglobin, a disease state results which tends to be milder or more typical. Sickle-cell hemoglobin (C) disease, about which I will have more to say, occurs in approximately one out of every fifteen hundred Negroes.

In sickle-cell disease the red cells sickle in the deoxygenated systemic capillary bed and unsickle in the oxygenated pulmonary bed. In the deoxygenated environment, whether natural or artificial, the (S) hemoglobin is reduced. In this reduced stage it is less soluble, and its molecules assume rod-like parallel arrangements. This elongates the erythrocyte two to five times the original diameter of the erythrocyte.

Sickled cells are rigid and inflexible and in the smaller cappillaries become impacted. Stasis with thrombosis and hemorrhage occur. The local vasculature becomes anoxic and endarteritis with infarction occurs. In sickle-cell disease infarcts and hemorrhage have been known to occur in the kidneys, lungs, spleen, liver, joints, arachnoid, etc.

In 1950 Henderson and in 1930 Cook each reported one case of sickle-cell anemia with retinal hemorrhage. In 1952 Edington and Sarkies reported two cases of sickle-cell anemia with retinal micro-aneurysms in both and a vitreous hemorrhage in one. In 1954 Henry and Chapman reported nine cases of sickle-cell disease, both with and without anemia, with associated retinal pathology.

My attention was called to sickle-cell disease as a possible cause of intraocular hemorrhage in October of last year. At that time a forty-nine-year-old Negro woman was seen due to failing vision. Her vision was 20/60 and 20/30 in the right and left eye respectively. There was a dark fundal reflex in the left eye and no details could be seen. On slit-lamp examination blood was seen in the anterior vitreous.

The right eye was normal except for the retina and the vitreous. The vitreous was perfectly clear, but in two areas new vessels extended in tufted convolutions from the retina into the posterior vitreous. Partially covering the disc was some glial proliferation which extended forward two diopters into the vitreous. The retina was stretched in thin radial folds in a spoke-like arrangement around the macula area. This area was an irregularly shaped, dull, mottled red depression with sharp edges. The arteries and veins were very tortuous and several areas of neovascularization covered a small portion of the retina. Numerous round and flame-shaped hemorrhages were scattered throughout the retina.

A thorough search for the etiology was done with negative results. Because of a rash over the nasal and malar regions, a check for L E cells was run with negative results. Because of the history of some healed leg ulcers, sickle-cell preparations were run and seventy per cent of the cells sickled. The erythrocyte count and hemoglobin determinations were normal. Blood was then forwarded to the University of Tennessee where electrophoretic studies were run. The report from this department is as follows: "The electrophoretic pattern of the blood of Melissa Gardner shows that she carries a combination of hemoglobin (S) plus (C). No hemoglobin (A) is present. In our experience sickle-cell hemoglobin (C) disease is associated with a mild to moderate anemia which often is slightly hypochromic. Usually a considerable number of target cells is present causing an increased resistance to hypotonic saline solutions. These patients generally are more subject to occlusive vascular phenomena than patients with the sickle-cell trait. The literature contains a good number of instances of splenic infarction in sickle-cell hemoglobin (C) patients and painless hematuria. It is quite conceivable that the ocular manifestations of your patient are at least partially related to her hemoglobin abnormality."

Certainly this one case proves nothing. However, the thirteen other cases in the literature would seem to me to make a point. Since sickle-cell disease causes occlusive vascular phenomena, it would seem that sickle-cell preparations should be run on all cases of retinal hemorrhage when the etiology is obscure.

REFERENCES

Advances In Internal Medicine, Vol. VIII,
Edington, C. N., and Sarkie, J. W. R.: Tr. Roy.

Soc. Trop. Med. and Hyg., (Jan.) 1952,
Cook, W. C.: J. Med. (Dec.) 1930,
Henderson, A. B.: Am. J. Med. (Dec.) 1950,
Henry, M. D., and Chapman, A. Z.: Am. J. of Oph. (Aug.) 1954,
Elwyn, Herman: Diseases of the Retina,
Duke-Elder: Textbook of Oph., Vol. III.

DISCUSSION

Dr. Thomas W. Wesson (Tupelo)—Our present state of knowledge concerning hemorrhages in the retina may be compared to that of our knowledge concerning endogenous uveitis. At times, notably in the severe diabetic, the reason is quite evident. At other times we see patients with retinal hemorrhages much as we see those with endogenous uveitis for which the cause cannot be found. This does not mean that there is not a cause in either case. It means that with our present knowledge we are unable to discover the cause.

I think that we owe our thanks to Dr. Boggess for presenting a little known cause for hemorrhagic retinopathy. This may prove some four years ago a colored woman, age about 55, who was referred to me by her family physician who suspected an intraocular tumor. The eye was blind, tension moderately elevated, and vitreous grossly full of blood. I agreed with her physician that intraocular tumor was an excellent possibility. The eye was enucleated and sent to Armed Forces Institute of Pathology. No tumor was found. Their final diagnosis was "retinal and vitreous hemorrhage." So far I have not been able to get her back for sickle-cell studies. This would be interesting to know in her case.

Thank you again, Dr. Boggess, for a paper which will stimulate our thinking considerably about hemorrhagic retinopathy.

The Doctor As a Citizen*

VERNER S. HOLMES, M. D.
McComb, Miss.

First I would like to explain that this paper was not originally written for presentation to group. It was written and presented to a group of senior medical students at the University of Mississippi. I well realize that many of the things that are brought out in this paper are not applicable to you. When I was first asked to give this talk, or paper, on the obligation of the doctor as a citizen, I responded in typical fashion of most doctors. That is, "I am too busy to prepare such a paper, and feel that there are others than can do it so much better than I." That answer reflects what is happening today in the medical profession regarding participation in things outside of our practice. I realize that I am no speaker or teacher, but feel that when we as doctors are called upon to do something, even though it may not be directly related to our practice, we should do it.

I wonder sometimes if we, as doctors, appreciate our title of "Doctor of Medicine" as much as we should. Just that title alone gives us a position of prestige in our community. Many of us are prone to think of ourselves as doctors of medicine and nothing more. We should realize that first we are citizens, and being citizens we have certain rights and privileges, also certain responsibilities and obligations. The letters "M. D." after our names do not exempt us from a citizen's responsibilities. Our primary obligation, as has been true for the past twenty-five hundred years, is the healing of our patients. Responsibility to community and responsibility to patient are not separate conflicting aims, but parts of a whole. Too frequently we are content to bury ourselves in personal affairs and disregard completely what is taking place around us. We must begin to correct the disease which afflicts our profession today by assuming the proper place in community life, which should mean one of leadership.

Because of his acknowledged education and training, the physician should begin to reduce the prevalent loss of faith in the medical profession. It is almost fashionable to criticize medicine nowadays. The doctor is no longer, as Robert Louis Stevenson put it, "the flower of civilization". Instead, he is often pilloried by a hostile press as a smart technician out to make a fast buck. In the past few years the medical profession has been attacked in several hundred articles, investigated by congressional committees, and besmirched in private conversation. Much of the current criticism of the profession can be dismissed as unwarranted. But when we look at the criticism directed against us with detachment and objectivity we will find that some of this criticism is moderate and grounded in fact. I think that the public as a whole feels that today's doctors have separated themselves from the common life and problems of the communities in which they live, and in so doing some of us have lost the human touch. Whether this is due to a tendency toward increased specialization or not, I do not know. If we are to recover some of our lost prestige we must identify ourselves intelligently with the whole community.

---

*Presented before the Mississippi EENT Association, May, 1957.

It is true a few doctors become so involved in their practice and in community service that even their own families are neglected. The physician must not forget his responsibility to his family and to himself. He must not only keep himself professionally proficient, but he must live in moderation and preserve his physical and mental energy just as he urges his patients to do. He owes it to his family to spend some time with them and utilize cultural and spiritual resources offered to them by wholesome recreation, home life, social and spiritual activities.

Many of us practice in small communities. Others practice in the larger cities. But the responsibility remains the same. We should strive to be a part of that community or city, utilize the leadership that automatically is ours by the nature of our profession. There are numerous fields of community life in which a physician can be active. Even in the smallest community there is usually an opportunity for a physician to take an active part in one of many service clubs, such as Rotary International, Lions Club, Kiwanis Club, Exchange Club, all of which are striving to make a better community in which to live. And certainly we as physicians should, as members, participate in these club endeavors. The physician should have particular interest in our public education, in work with boys and girls, and in charitable and philanthropic organizations. The public schools wield a powerful influence in our country, second only to that of the home and church. If we are interested in our future we must be interested in our public schools; yet, how often do we find the physician—citizen, taxpayer, and father though he may be—content to let others run the schools as they will; to let his wife help the children with their homework, and to assume no responsibility himself. There are certain questions that each physician might consider. Are the schools in my community doing a good job? Are the physical facilities adequate with sufficient safeguards for the children's health? Are the teachers persons of good character, qualified to mold the thinking of boys and girls? Are the athletic coaches intent solely on developing winning teams, or are they concerned with teaching good sportsmanship and character as well? Are the members of the school board men and women of vision and courage? Are the textbooks based on American principles, and religious ideals, or are they tinted with the message of communism and atheism? As a citizen we have the privilege of helping to correct whatever deficiencies or inadequacies which may exist. Few members of a community are better qualified than th physician to stimulate, to promote, and to participate in work with boys and girls, and few leaders will be more widely respected and followed more quickly. The opportunities for such service are numerous—Boy Scouts, Girl Scouts, the YMCA, youth groups in churches, athletic leagues, and numerous other organizations —all are begging for the interest and support that physicians can give. Who knows the problems of the people of the community better than the practicing physician? Who is better qualified to sit on the planning boards of organizations that help the poor? Who is better able to give advice on the problems of the physically handicapped, to aid in the promotion of programs for physical, economic, and social rehabilitation? Who is in a better position to understand and deal with the growing problem of alcoholism?

Our great need today is for every physician who is a member of a religious organization to reaffirm his vows, and to let the public, as well as his colleagues, know in clear and unmistakable language the principles for which he stands, and the belief that he holds. Most physicians I have known are men of high principles. Many of them hold strong religious beliefs. Yet, for some reason they tend to shy away from expression of their conviction except in private conversation with intimate friends. As a result, they are regarded by the public and by their colleagues as men who have good moral character, but have a lukewarm attitude toward religion itself. If a doctor professes a religious faith, he has a responsibility to organized religion—the church, synagogue, or temple —which teaches and preaches the faith he has professed. All men live by a faith of some sort, and the question is by which faith shall we live. It has been said that as far as Christianity is concerned, the relationship between medicine and religion has passed through three stages . . . in the first stage, medicine was both fostered and dominated by religion; the monasteries were hospitals; but this domination eventually hampered the freedom of medical research.

In the second stage, medicine in many respects divorced itself from religion, and a state of antagonism developed. In that stage there was an attitude of courteous contempt between physicians and the parson. The doctor's image of the parson was that of a bigoted reactionary opposed to science, substituting prayers and magic for sanitation and scientific medical care. On the other hand, the minister saw the doctor as a profane agnostic, disciple of Tom Paine, Bob Ingersoll and Brand. Now the situation has changed. We are coming to see that the good life rests on a working partnership between science and religion. Thus a third stage appears, which is an intelligent cooperation between medicine and religion; confidence and cooperation between physician and parson are replacing the former attitude of courteous contempt. Our responsibility to the church is not discharged by writing an occasional check, or furnishing a background for our wives' Easter bonnet. It goes deeper than that. We must understand our faith at a mature level, participate in worship and contribute generously to the support of organized religion.

Too many of our physicians are withholding professional and financial support from the local Chambers of Commerce, potentially the strongest single force in existence to perpetuate and refine our free enterprise system and to improve the general welfare of our communities. Although some few communities in this country have as high as ninety per cent of their physicians belonging to the local Chamber of Commerce, others have as low as ten per cent. And a general average for the entire nation is undoubtedly considerably below fifty per cent.

In recent years, the doctors have seemed to frown on participation in politics. In fact, the word "politics" was something below the dignity not only of doctors but of many good citizens. One of the myths that spring up from time to time in the medical profession is that all politicians are unsavory characters, and that a doctor should stay out of politics in the interest of himself, and organized medicine. The exact reverse is true. As is stated in the American Medical Association's Principles of Medical Ethics, approved by members in usual democratic process, doctors "should bear their part in enforcing the law in the community and in sustaining the institutions that advance the interest of humanity". There are many substantial reasons why politics is our business. First, we have the responsibility of leadership. Second, we are individually and as a group in an enviable position with regard to the influence we can bring to bear in matters of government. We, as individual doctors, have an opportunity that is granted to few people in that through our work we have an intimate, personal contact every day with people from every walk of life. A doctor is able to build up a relationship which can hardly be constructed in any other way. Who, then, is better qualified than the trusted family doctor, a man of known integrity, to counteract the falsely humanitarian philosophy of those who preach the welfare state approach to human betterment? Unfortunately, entirely too many are willing to leave these responsibilities to others. So those of us who in good conscience feel obligated to work toward this goal, must strive all the harder for it. Certainly we have fought the symptom of socialized medicine, but what have we done about the cancer of collectivist thinking which is responsible for the symptom? Through the inadequacy of expression, through neglect, or both, those best qualified by intelligence and ability have allowed the thinking of many citizens to be captured by the rabble rousers who appeal to the emotions rather than to the intellect. Edmund Burke has said, "For the triumph of evil, it is only necessary that good men do nothing."

In our nation's 181-year history, not a single Congress has been without at least several doctors in the role of Legislators. And the physicians were right there from the start—five of them signed the Declaration of Independence. Through the years scores of doctors who voted in either the Senate or the House of Representatives, have also served as state, or territorial governors, judges, sheriffs, state legislators, and mayors. All this experience points up the fact that there is nothing improper or new in physicians taking an active part in our national government. It is true that there are only thirty-eight physicians in Congress, which brings the average to less than one physician for each state. In our own state, for the first time in many years, there are no physicians serving as members of the legislature. Just think what it would mean if we had one or two doctors to help us with our problems concerning our medical school! So I say, we should not hesitate to take a positive stand on political issues. The point is not whether we are Democrats, or Republicans, but whether we take our places at the post of citizenship. The doctor who is too indefferent to vote is like the man who is too lazy to turn off the running water in the bath tub. It filled his house and he drowned.

I realize that for a doctor to take a lead in his community's affairs is a great sacrifice. With the rapid advancement of medicine today, we have to strive constantly to keep up. In our time we have seen increased requirements all the way from pre-med, medicine, and postgraduate training. To keep pace with medicine, we must constantly study, take postgraduate courses, attend medical meetings, plus keep up with our practice.

Ovarian Failure

C. G. SUTHERLAND, M. D., JAMES L. ROYALS, M. D., CLAUDE G. CALLENDER, M.D.
Jackson, Mississippi

It has often been stated that the clinician should have a philosophy about the disease entity which he proposes to treat, even though future knowledge may dictate that this philosophy be changed. Especially is this true in areas where the entire picture of a specific entity has not been adequately explained. Such is the case with the problem of ovarian failure.

The purpose of this paper is to present an approach to this disorder which, to the author's mind at least, provides a rational means of diagnosis and treatment in the majority of cases.

In order to understand the problem of ovarian failure, one must be familiar, in at least a general fashion, with the physiology of normal menstruation. Thanks to many investigators, including Markee, Novak, Hertig, and others, the following brief discussion may be accepted, even though gaps still remain in the theoretical consideration of the disorder.

The normal menstrual cycle represents cyclic changes in the endometrium. The purpose of these changes is to prepare the uterus for the reception of the fertilized egg. When this fails to occur, the bleeding phase ensues with the cycle immediately repeating itself. The actual bleeding phase, unless pathological, is of little consequence. Futhermore, the ovaries and uterus are not autonomous in their function, but are target organs, functioning as a result of hormonal stimulation. Thus, the ovary functions as a result of stimulation by the pituitary gonadotropins, and the uterus undergoes changes as a result of stimulation by the ovarian hormones.

For purposes of discussion, a typical 28-day cycle will be considered, realizing that perfectly normal cycles may vary from 25 to 35 days in interval and that most normal women will vary one or two days in their cycle if a careful record is maintained.

The changes in the endometrium from day one of the cycle to ovulation are primarily changes of growth of the glands, stroma, lining epithelium, and arterioles as a result of estrogenic stimulation. This period is spoken of as the "proliferative phase." After ovulation, due to the presence of progesterone in addition to estrogen, further changes of the endometrium occur, including the secretion of glycogen into the lumen of the glands. This phase is called the "secretory phase."

The pituitary gland, the ovaries, and the uterus are directly involved in the menstrual phenomena. The pituitary gland, through the secretion of gonadotropic hormones (follicle stimulating hormone or FSH; luteinizing hormone or LH, and luteotropic hormone) initiates the chain of events which, for purposes of discussion, may be said to start on day one of a normal menstrual period. Beginning at this time, the pituitary gland secretes large amounts of FSH which in turn causes several follicles of the ovary to grow. At the same time, the pituitary gland is secreting small amounts of LH which apparently is necessary for ovulation to occur. As a result of follicle stimulating by the pituitary, the ovary, on day one, begins to secrete estrogen in increasing amounts which in turn stimulates the endometrium of the uterus to start growing again. Thus, the endometrium may be considered to be in a state of slough and a state of repair at the same time.

At approximately day 14, under normal conditions, one follicle ruptures during the process of ovulation, and the other follicles subsequently regress. After ovulation, the follicle becomes the corpus luteum of the ovary. The pituitary, after ovulation; also secretes the luteotropic hormone in addition to FSH and LH, and this hormone helps insure the proper function of the corpus luteum. The corpus luteum continues to secrete estrogen and in addition secretes progesterone during the last two weeks of the cycle. In addition to the action of estrogen and progesterone upon the endometrium, they also exert an effect upon the pituitary causing a decrease in the gonadotropic secretions from this gland and a change in the balance of the three gonadotropins as to the amount of each being secreted at various stages in the cycle.

At approximately day 25 or 26, in the event pregnancy does not occur, there is a marked drop in the level of estrogen and progesterone being secreted by the corpus luteum. As a result of this failure of "hormonal support" to the endometrium, various physiological changes occur within the endometrium itself (decrease in edema, buckling of the spiral arterioles, constriction and

---

*Presented before the Section on Obstetrics and Gynecology at the eighty-eighth annual session of the Mississippi Statee Medical Association, Biloxi, Mississippi, May 14-16, 1957.

then dilatation of the arterioles), necrosis occurs, and the bleeding phase begins with small areas of endometrium being sloughed off and discharged with the menstrual blood.

It is readily seen then that during the first two weeks, or proliferative phase, FSH, LH, and estrogen are being secreted, and that only during the last two weeks, or secretory phase, is progesterone and luteotropin produced in addition to the other two hormones.

Histologically, the difference between the proliferative and well-developed secretory phase is quite marked, and hence it is possible to determine whether or not ovulation has occurred by study of a sample of endometrium (endometrial biopsy or curettage) obtained late in the cycle, or within the first few hours after the bleeding phase begins. The experienced pathologist can also determine with a high degree of accuracy whether or not adequate progesterone stimulation has occurred, since the histological picture of the secretory endometrium varies according to the degree of progesterone stimulation.

It is reasonable to assume that such a complicated mechanism as is involved in normal menstruation is under a rather delicate hormonal balance which may be upset by a variety of different conditions.

Ovarian failure, then, is by definition a condition in which this mechanism is upset and the normal function of the ovary is deranged. Usually, the term means failure of ovulation but may also include inadequate progesterone stimulation during the last half of the cycle. In other words, the ovary is "failing" to perform its proper function—namely, to ovulate and to produce estrogen and progesterone in a normal manner. When this happens, the uterus is stimulated in an abnormal manner and various menstrual patterns may result.

If the intrinsic difficulty lies within the ovary per se, the condition is spoken of as "primary ovarian failure." On the other hand, if the causative condition lies outside the ovary and ovarian function is deranged as a result of improper pituitary stimulation, then it is called "secondary ovarian failure."

Examples of primary ovarian failure would include the climateric patient where the ovary is nearing the end of its functional life, as well as such conditions as infections or tumors of the ovary which directly compromise its function.

Examples of secondary ovarian failure would include the climaeteric patient where the ovary is who fails to ovulate or who has an abnormal menstrual pattern. The ovarian dysfunction may be secondary to a pituitary dysfunction which is in itself deranged because of the abnormal metabolism of the uncontrolled diabetic. Indeed, it might be said that any condition, acute or chronic, which interferes with the general health of the patient may produce secondary ovarian failure. Thus, the patient with an inadequate diet, thyroid disease, tuberculosis, acute infectious diseases, etc., may suffer from secondary ovarian failure. And finally, emotional disorders, probably mediated through the hypothalamic-pituitary pathways, may produce secondary ovarian failure.

Following this line of reasoning further, it might be said that the bleeding phase of the patient's menstrual cycle is no index of the etiology of ovarian failure. For instance, as a result of either primary or secondary ovarian failure, at least three different patterns may result, to wit:

a) The patient has a normal cycle as to interval and bleeding phase, but ovulation is absent. These patients usually present themselves with a complaint of inability to conceive.

b) The patient has abnormal cycles and/or bleeding phases such as is seen in metrorrhagia, menorrhagia, oligomenorrhea, polymenorrhea, etc.

c) The patient has amenorrhea.

It follows then that an individual patient who has any of the etiological conditions listed above, may have any of these three basic patterns as a result of ovarian failure. It further follows that such terms as amenorrhea, menorrhagia, metrorrhagia, etc., are merely descriptive terminology applied to an individual bleeding pattern (or lack of it) and are not indicative of the etiology.

The authors in no wise intend to imply that abnormal uterine bleeding is necessarily on an ovarian failure basis. Rather, the implication is intended to be that when abnormal uterine bleeding is not caused by organic conditions directly involving the uterus or as a result of pregnancy, it occurs through the mechanism spoken of as ovarian failure. To further elucidate, it might be said that the uterus will not bleed of its own accord but bleeds only as a result of (1) organic conditions, (2) pregnancy, which may be normal or abnormal, and (3) as a result of hormonal stimulation. The hormonal stimulation may be normal or abnormal from the ovaries, may result from the administration of hormones by the physician, or may occur as a result of functioning tumors of the ovary or conditions of the adrenal cortex which result in an increased secretion of these substances.

Clinically, the importance of ovarian failure lies primarily in its direct effect upon the patient, the fact that it may be indicative of disorders elsewhere, and, in the older patient, the fact that cancer must be so carefully considered. In patients who have excessive bleeding, severe anemia may result. Patients with irregular menses or amenorrhea may develop marked anxiety states concerning their conditions. Ovarian failure and the subsequent inability to conceive may be of great import in some women. In many patients, secondary ovarian failure may represent one of the end results of other serious conditions which in themselves must be treated, not only to effect a cure of the primary disorder but also because often the primary difficulty must be cured or controlled before the ovarian failure aspect will be improved. (For instance, in the uncontrolled diabetic with ovarian failure, the diabetes may well have to be controlled before the abnormal ovarian function will be righted.) And finally, abnormal bleeding in the older patient is always important because of the likelihood of cancer. One must be especially careful in the older age group not to overlook a malignancy on the assumption that abnormal bleeding is due to ovarian failure.

The diagnosis may often be made definitively by a study of the endometrium but is also often made on the basis of exclusion in the younger patients.

The authors prefer to arbitrarily divide patients with this disorder into three groups, for a consideration of diagnosis and treatment, since it is felt that different problems present themselves in the three categories. Thus, one might consider the patients who experience difficulty at the time of the menarche, those in the reproductive age group, and those in the climacteric. For purposes of discussion, ages 12 to 18, 19 to 34, and 35 to 50 may be selected as representative of these three groups.

This paper is concerned with the USUAL patient who has menstrual aberrations. No attempt is made to discuss or even mention all of the possibilities. Such syndromes as ovarian agenesis, Sheehan's Syndrome, the Stein-Leventhal Syndrome, Simmons' disease, and others are seen so infrequently in the usual private practice that they are outside the intended practical scope of this paper. In addition, they are deserving of much more discussion than would be desirable in a preparation of this type. The intent is to attempt to present ovarian failure and its usual ramifications in a manner which will be of practical value to the busy practitioner and allow him to treat the vast majority of cases in a rational and effective manner. In admitting the shortcomings, it is also assumed that in any patient in whom this approach is not effective the desirability of more intensive study will be kept in mind.

Likewise, emotional problems and their effect upon menstruation will not be discussed extensively. Suffice it to say that there is ample evidence that severe emotional shocks, anxieties, excessive mental fatigue, pregnophobia, unhappy home life, and the like, may play a real role in the etiology of ovarian failure and should certainly be carefully considered as the possible etiology. In an occasional patient, expert psychiatric treatment may be needed before the menstrual pattern reverts to a normal state. In most patients, however, a simple explanation of the physiology concerned, coupled with a sympathetic attitude and reassurance, is all that is necessary to treat this aspect of the condition. Indeed, this is important in the treatment of all of these cases, even though an emotional correlation is not suspected.

Diet is of great importance in many of these patients, especially in the teenage group in whom irregular and inadequate meals are so often the aftermath of their social activities. One should be particularly inquisitive as to the possibility of an inadequate diet, and any deficiencies found should be corrected. Proper diet, rest, and recreation are very important aspects of treatment in many patients who exhibit menstrual aberrations.

THE ADOLESCENT GROUP

It should be remembered that during this period, the female is undergoing marked physiological changes. It is reasonable to assume that proper endocrine balance will not be reached immediately. In the majority of instances, probably the first few menstrual cycles are characterized by an anovulatory type of menstrual bleeding.

If the physician is consulted because of delayed menarche and a careful history and physical examination (including a recto-pelvic examination), blood count, and urinalysis reveal no abnormalities, then the best course of action in the majority of cases is to reassure the patient and her family and to await future developments. Attention to such things as proper diet, rest, and recreation, coupled with reassurance and an explanation that the menarche varies in onset from ages 10 to 17, is frequently the only treatment necessary.

In this age group, irregular menses per se are likewise of little importance when excessive bleeding is not associated with the irregularity. Infertility is not a consideration in most cases. Therefore, the supervision of the adolescent who has not developed a regular menstrual pattern is similar to that employed for those with delayed menarche.

Excessive bleeding in this age group, then, is generally the only indication for definitive treatment other than the general measures discussed above. If no cause for ovarian failure is found (which in itself needs treatment) by carefully surveying the patient, the problem becomes one of excessive blood loss on the basis of failure of proper endocrine balance. This diagnosis may be safely made in most patients of this type on the basis of exclusion alone. Due to the physical and emotional trauma that may be associated with the utilization of endometrial biopsy and curettage in these young patients, these procedures are only rarely employed as diagnostic aids in this age group.

After a diagnosis of menorrhagia due to ovarian failure is made, the treatment is concerned with controlling the bleeding, utilizing the general measures discussed above, and again employing "the essence of time" as an important part of the therapeutic armamentarium.

The mechanism employed to control the bleeding varies with the degree of blood loss. The quickest method by which such bleeding may be controlled is by the use of curettage, used here primarily as a therapeutic measure rather than as a diagnostic procedure, although obviously it would serve bilaterally in this regard.

Curettage would involve hospitalization, an anesthetic, rupture of the hymen in many young girls, and very definitely would create a psychological experience for her, with the potential risk at least of emotional fixation upon her reproductive organs. Because of these considerations, the authors would much prefer to utilize curettage only when its superiority in controlling the immediate bleeding phase was deemed to be necessary, or if more conservative therapy has proved ineffective. Rather, we would much prefer to attempt to control the bleeding by substitutional hormone therapy.

In most of these young patients, adequate estrogen therapy will stop the bleeding satisfactorily. It should be remembered that this hormone, as in insulin to control the diabetic or thyroid administration to the hypothyroid patient, has no definitive dosage that will be equally effective in all patients. In some patients, a higher dosage will be required than in others. It should also be remembered that the superiority of one particular product over another is of little moment as long as the relative effect of the various hormones, milligram per milligram, is known. It matters little, then, whether or not one uses one of the conjugated estrogens such as "premarin," one of the highly potent estrogens such as "ethynl estradiol" or a synthetic estrogen such as "stilbestrol." All will usually work equally well from a clinical standpoint if comparable dosages are used.

One satisfactory technique that may be used is as follows. The patient is instructed to take premarin, 2.5 mg., orally, twice daily for 21 days. In most cases, because growth of the endometrium has begun as a result of estrogen stimulation, the bleeding will cease in four or five days. If it has not stopped, the daily dosage should be increased to 2.5 mg. three or four times daily. When the necessary dosage is established, it should be maintained for 21 days. After the hormone is stopped, the patient will have withdrawal bleeding beginning in 4 or 5 days. The 21-day regime may be repeated, beginning on the second or third day of the withdrawal bleeding, for another cycle, or the patient may be observed, limiting the estrogen therapy to one cycle unless otherwise indicated. Ordinarily, the authors prefer to use it through two cycles and then stop the medication. Progesterone, in dosages of approximately 50 mg. per day, may be added during the last five days of the cyclic treatment. The advantages of producing an artificial secretory pattern of the endometrium by adding progesterone are open to question, but there is clinical evidence that it may be of real value in some cases. Its use seems to be followed by a more physiological slough of the endometrium than is obtained by the use of estrogens alone.

In addition to the cyclic therapy, the general measures discussed above are also utilized. Dessicated thyroid (proloid, one grain daily) is also very frequently used with what is believed to be gratifying results, and is continued until a normal menstrual pattern is established. It is the feeling of this group that even though the Basal Metabolic Rate test is not as accurate an indicator of thyroid function as other tests, it still has a place as an office procedure for the usual practitioner. We employ the BMR evaluation in many patients with ovarian failure. In addition, we do not hesitate to use thyroid empirically in cases where no contraindications to its use are present, as determined by clinical evaluation and the BMR.

In the few patients of this group who are bleeding so heavily that curettage is necessary for immediate control of blood loss, this is frequently sufficient without the subsequent utilization of cyclic hormonal therapy. However, if one prefers to use the artificial cycle, beginning on the 3rd or 4th day after the curettage, then this, too, is a rational approach.

Testosterone may also be used to stop the bleeding, although, of course, there will be no growth of the endometrium as a result of its administration, and hence no bleeding as a result of its withdrawal. This hormone is apparently effective through the mechanisms of stimulating the pituitary to exhaustion (and thereby suppressing it), neutralizing the circulating estrogen and producing a sclerosis of the end arteries of the endometrium. It should not be used in excessive dosages or for prolonged periods because of the danger of masculinization. Testosterone proprionate, 50 mg., I.M., every other day for three days will usually stop the bleeding. Subsequent bleeding episodes will then occur as a result of ovarian hormone stimulation.

Hormonal therapy of this type is probably only substitutive in nature, and not curative in itself. It is used to control bleeding, but has no effect on cause of the bleeding unless one postulates that through suppression, the pituitary and ovary are placed at rest. If the ovarian failure is caused by a condition which in itself can be identified and treated, then this is done in conjunction with hormonal therapy that controls the bleeding until the primary difficulty is corrected. On the other hand, in many patients, the specific disturbance is not obvious, and here the hormonal treatment is used for control of bleeding in conjunction with general measures and the empirical use of thyroid. In this type patient, it has been aptly said that "the doctor treats the patient — God cures her." In the very few patients in whom reasonably high dosages of hormones fail to control the bleeding, then it behooves one to assume that the bleeding is on an organic basis, and any necessary diagnostic steps, including diagnostic curettage should be undertaken.

Hysterectomy for ovarian failure bleeding in this age group should never be done except as a last resort. Needless to say, it would be extremely rarely indicated.

THE REPRODUCTIVE AGE GROUP

In many respects, ovarian failure in this age group is similar to that which concerns the adolescent. Certainly this is true as to etiology and symptomatology. More frequently, however, these patients have previously been in a state of hormonal balance, with normal menses. The ovarian failure is more likely to be secondary rather than primary as is so often the case during the earlier phases of menstrual life. It is probably safe to say that most women in the reproductive era have an occasional anovulatory cycle, and thereby have ovarian failure for at least that particular cycle. Of course, many of these patients never consult a physician since their menses return to normal without specific treatment, or else the ovarian failure does not produce significant symptoms for them to seek medical advice.

The main difference between the adolescent and reproductive eras lies in the fact that, in the latter, infertility may be of great importance. In addition, curettage is used with much less hesitation, either as a diagnostic or therapeutic measure. Frequently, this is all that is required other than general measures and the employment of thyroid. The endometrial biopsy is quite helpful in the management of these patients in that it frequently enables one to make a definitive diagnosis. It is an office procedure, and in most patients may be performed without undue discomfort. The Novak suction curette is quite satisfactory for this procedure. It should be remembered that it is necessary to take the biopsy late in the secretory phase or within a few hours after menstruation begins. It is also helpful to the pathologist to supply him with information regarding the patient's last period, since he is attempting to evaluate physiological as well as pathological changes. One may also make the diagnosis by exclusion during the reproductive era, and safely proceed with treatment for a short period of time at least. However, since the diagnosis is relatively easily made definitively, and since in the older patients of this group, the incidence of cancer and other organic lesions is increased, the authors employ biopsy and/or curettage quite frequently.

One might propose to treat all of these patients by curettage as an initial diagnostic and therapeutic measure. Certainly, there would be no objection to this if the patient were having excessive blood loss, or if there were reason to expect organic lesions or pregnancy aberrations as causing or contributing to the difficulty. On the other hand, since many of these patients will become normal without curettage, since cancer is of little likelihood in the younger women of this group, since curettage does involve some anesthetic risk and the cost of hospitalization, we would prefer to individualize the cases and not use curettage as a routine initial procedure.

After a diagnosis of ovarian failure is made in this group, the same general plan of therapy is followed as discussed under the adolescent group. General measures and at least two artificial cycles with estrogens and progesterone is the usual therapeutic approach that is employed. Testosterone is used at times and particularly is this true when a patient is found to have what is believed to be functioning cysts of the ovary. The testosterone will usually stop the bleeding and, in addition, upon re-examination in two or three weeks, it will often be found that the cysts have disappeared. Thus, the testosterone used in this fashion acts as a therapeutic agent in controlling bleeding and as a diagnostic procedure in helping to differentiate functional cysts from true ovarian neoplasms.

Since infertility is a problem at times in this type patient, it would be most helpful if one could induce ovulation. Theoretically, human pituitary gonadotropin would do this — but, unfortunately, human gonadotropin of this type is not available from either human or synthetic sources. The animal pituitary gonadotropin that is available is not satisfactory for stimulating ovulation, probably due to species difference as well as the production of antibodies against such hormones when injected into the human.

X-ray stimulation of the ovaries and/or pituitary gland by the utilization of small doses of radiation does seem to be an effective way to induce ovulation in some women. However, because of possible hereditary genetic mutations, this form of therapy should be reserved for those patients in whom all other measures have failed, but who are still most desirous of conceiving. This form of therapy is used upon occasion in this clinic.

Amenorrhea from ovarian failure in this group of patients is in itself only of importance as it is related to the etiology which may demand treatment, the associated infertility, and the emotional disturbance that lack of menstruation produces in some patients. Short periods of amenorrhea may be viewed with more optimism than long periods of this same condition. In the patients who are amenorrheic for less than six months, the problem may be approached from the standpoint of simple ovarian failure and greeted with general measures, thyroid, and cyclic hormone therapy. If this does not suffice, or if the patient has been amenorrheic for a long period of time, then consideration should be given to a more intensive investigation as to etiology as well as the utilization of x-ray stimulation.

Hysterectomy is occasionally indicated during this era, especially in patients who already have completed their childbearing and in whom excessive blood loss continues to be a problem. That is not to say that the procedure should be used promiscuously, but certainly it is more often indicated here than in the younger age group. The 25 year old girl with no children and intact reproductive organs presents a different problem than the 25-year-old with 5 children who has previously had a bilateral salpingectomy, who is emotionally stable, and who had has repeated curettages but still has excessive blood loss to the point of anemia. Again, the patients must be individualized as to the best form of treatment for each.

THE OLDER AGE GROUP

Ovarian failure in this group differs from the first two in that the patient is nearing the end of her reproductive life, and she is in the so-called cancer age group.

It is most important to consider the possibility of cancer in this group of women when they have abnormal bleeding, and the older the patient the greater the likelihood of this possibility. It is difficult to establish a set criterion by which curettage should be done to rule out cancer, but it is our belief that patients with severe menorrhagia, prolonged menses and intermenstrual bleeding should have the benefit of this diagnostic procedure. Endometrial biopsy may be used also, and is fairly efficacious in making a positive diagnosis. However, in case of a negative biopsy report, it is hazardous to rely on this alone, and curettage should then be done. By the same token, vaginal smears cannot be used to rule out carcinoma of the endometrium since errors in diagnosis (particularly false negative reports) are so frequently made in this particular cancerous condition.

Curettage is also an important therapeutic tool in this era. Following curettage, many of the patients who are younger (35 to 40) proceed with a normal pattern for several years, and older patients frequently proceed through the climacteric without further suspicious bleeding episodes.

Estrogens as discussed above are not used in a cyclic fashion in these patients except in unusual cases. The 35 year old patient who is recently married and quite desirous of pregnancy may be treated for ovarian failure in this way, of course, since her reproductive life, although shorter than the other two groups, is long enough to justify giving her the benefit of the doubt. On the other hand, in the older patients (40 to 45), there would seem to be little rationale in its use, and, theoretically at least, it could be potentially dangerous. The exact relationship of estrogen stimulation to carcinoma of the uterus has not been definitely determined, but we should remember that in these older patients who are in the climacteric phase there is nothing we can do to prolong the life expectancy of the ovary, and hence the function of the uterus cannot be prolonged. If we cannot serve a useful purpose, there would seem to be little rationale in employing treatment that might be detrimental. In addition, by the use of estrogens to control bleeding in this age group, it is always possible to confuse the picture by producing irregular bleeding, and one may be faced with the problem of deciding whether or not the bleeding was due to estrogen withdrawal or an organic lesion. A false sense of security might result which could be hazardous. Should one desire to use hormonal therapy, testosterone, used in sub-masculinizing doses, would be the hormone of choice. However, again it should be used only after the possibility of cancer has been duly considered.

Endometrial hyperplasia is of more significance in this age group than it is in younger patients since there is suggestive evidence that carcinoma of the fundus may be preceded by this condition as a sort of intermediary condition from the transitional stage of normal endometrium to frank carcinoma. Especially is this true in the socalled severe, atypical types of hyperplasia. The same significance apparently does not exist in the young patient. However, in the climacteric age group, this finding should be viewed with more suspicion, and one should consider the desirability of more definitive treatment especially if it recurs after curettage.

Amenorrhea is in itself of no import in this age group except again as it may possibly be related to a serious etiology in a very occasional patient.

Aside from the confusion with possible serious organic lesions, patients in this group are severely compromised at times by excessive blood loss. Hysterectomy is more often indicated in this group because of ovarian failure bleeding than in the other two groups combined. However, again the patient should be carefully individualized, keeping in mind that a single curettage in an appreciable number of cases is all the treatment that is necessary. It might be said that when the bleeding in this age group interferes with the patient's health (anemia), happiness (inconvenience and constant fear of cancer), or it recurrently presents the possible diagnosis of cancer to the physician (necessitating repeated diagnostic curettage), that hysterectomy is indicated.

Radiation castration in the form of external x-ray or intrauterine radium application enjoyed much popularity at one time as the procedure of choice for definitive treatment of ovarian failure with abnormal bleeding in this age group. However, with the marked increase in safety of the surgical attack today, this clinic reserves radiation for those patients in whom surgery is unacceptable, or in whom the operative risk is too great to advise hysterectomy. Needless to say, radiation should only be used in this fashion after carcinoma has been ruled out.

BIBLIOGRAPHY

1. Fish, J. S.: Hemmorrhage of Late Pregnancy, Springfielf, 1955, Charles C. Thomas, p. 38.
2. Paalman, R. J., and Vander Veer, C. G.: Am. J. Obst. and Gynec. 65: 491, 1953.
3. Torrey, W. E.: Vasa Previa. Am. J. Obst. and Gynce. 63: 146, 1952.
4. Page, E. W., King, E. B., and Merrill, J. A.: Abruptio Placenta—Dangers of Delay in Delivery. Obst. and Gynec. 3: 385, 1954.
5. Dippel, A. L. and Brown, A. H.: Roentgen Visualization of the Placenta by Soft Tissue Technique: A Report of Two Years' Experience. Am. J. Obst. and Gynec. 40: 986, 1940.
6. Beilly, J. S., Greenberg, M. W., Aaron, J. B., and Peck, S. J.: Placenta Previa—An Eleven-Year Review, Am. J. Obst. and Gynec. 63: 414, 1952.
7. Ferguson, J. H.: Rupture of the Marginal Sinus of the Placenta. Am. J. Obst. and Gynec. 69: 995, 1955.
8. Schmitz, H. E., O'Dea, N. J., and Isaacs, J. H.: Placenta Praevia. Obst. and Gynec. 3: 3, 1954.
9. Eadie, F. S. and Randall, J. H.: Bleeding in Late Pregnancy. Obst. and Gynec. 3: 11, 1954.
10. Fitzgerald, J. E., Webster, A., Geittman, W. F., and Zummo, B.: Conservative Treatment of Placenta Praevia. Am. J. Obst. and Gynec. 68: 659, 1954.
11. Hatten, J. Q., Kirkpatrick, S. A., and Thornton, W. N., Jr.: Further Observations on the Expectant Management of Placenta Previa. Am. J. Obst. and Gynec. 70: 1181, 1955.
12. Tatum, H. J.: Placental Abruption. Obst. and Gynec. 2: 447, 1953.
13. Studdiford, W. E. and Decker, W. H.: Management of Premature Separation of the Placenta. Obst. and Gynec. 1: 418, 1953.
14. Gabriels, A. G.: Abruptio Placentae in a Smaller Obstetric Hospital. Obst. and Gynec. 5: 254, 1955.
15. Bieber, G. F.: Review of 353 Cases of Premature Separation of the Placenta. Am. J. Obst. and Gynec. 65: 257, 1953.

DISCUSSION

Dr. I. C. Knox, Jr., (Vicksburg) — In discussing a paper of the thoroughness and caliber of Dr. Sutherland's I am reminded of the plight of Alexander the Great when he sat down and cried because there were no new worlds to conquer. Dr. Sutherland has indeed imposed a great task upon the discussants of his paper, leaving only a few morsels to be gleaned following his harvest.

In the investigation of functional menstrual irregularities, particularly in the instance of amenorrhea in the adolescent and child-bearing group, it is important to bear in mind three outstanding possibilities: 1) pregnancy; 2) organic disease; and 3) psychosomatic influences. When these three factors have been eliminated it can be justifiably concluded that we are dealing with some type of endocrine dysfunction or aberration. It still remains to determine which gland or organ in the endocrine axis is at fault, or whether more than one is involved.

As Dr. Sutherland has pointed out, it is necessary that there be a properly functioning pituitary, thyroid, and ovary, and that the inter-relation and coordination between these organs be within normal limits. Thus, given a patient with amenorrhea justifiably proved to be hormonal or endocrine in etiology, we are faced with determining the source of fault and when correcting it.

If the ovaries are producing estrogens on a more or less cyclic basis, the integrity of the thyroid and pituitary cannot be questioned. However, due to lack of progestational influence a number of these patients will not menstruate, or will menstruate poorly or irregularly. It seems logical that this is a good starting point. If these patients are given a sufficient quantity of progesterone, preferably a few days or a week prior to the estimated date of menses (if this can be determined), and the patient then menstruates, the etiology is probably functional or psychosomatic. If no menses occur, however, the patient is then given estrogen as a primer, followed by progesterone. If no menses then fellow, the accusing finger points to uterine failure, which may be due to any number of reasons including agenesis or endometrial disease or destruction. If menses occur after the estrogen-progesteron esequence, the uterus is presumed to be functioning normally, and the causative factor is probably ovarian or pituitary.

In order to rule out the pituitary as the culprit, pregnant mare's serum is administered. If there is no response to this, ovarian failure can then be diagnosed. If response does occur, as evidenced by vaginal cytologic changes, increased breast size, etc., and menstruation occur following progesterone administration, then the ovaries are presumed to be intact and the pituitary is indicted as being insufficient in function.

In lieu of the administration of pregnant mare's serum, gonadotropin assay ca be done, but in most instances this is not expedient and is somewhat more expensive than the use of pregnant mare's serum.

For an excellent detailed discussion of the above theraputic and investigative outline, I would like to refer to a recent article by Kupperman[1]. One of the major merits of this method, in addition to its logical sequence, is its simplicity.

Dr. Sutherland is to be commended and congratulated for the thoroughness of his presentation, and for the practical aspect of his therapeutic approach in a very difficult and often frustrating gynecological problem.

REFERENCES

1. Kupperman, Herbert S.; Amenorrhea: Diagnosis and Therapy, Surg. Clinics of North America, April 1957, Philadelphia, W. B. Saunders Co., 1957.

Dr. W. R. Raulston (Hattiesburg) — Of particular importance is Dr. Sutherland's concept of a philosophy in regard to ovarian failure which permits a rational approach to diagnosis and treatment but does not overlook the fact that much remains t obe learned about ovarian physiology. Very helpful in guiding therapy is the division of patients into the age groups Dr. Sutherland suggests which forces the question, What is the object of therapy in this particular individual?

Dr. Sutherland mentioned the usefulness of endometrial biopsy taken just prior to or at the onset of bleeding. Abnormal bleeding from secretory endometrium is practically always due to organic pathology and cannot be considered functional and, hence, is not amenable to hormonal treatmen.t Establishing ovulation, for practical purposes, excludes functional bleeding.

The main exception to this rule is the entity called irregular shedding or persistent corpus luteum. Here the bleeding is usually profuse and prolonged but regular in onset. Sinykin *et al* estimate it to be the cause of 10-17 per cent of all functional uterine bleeding. Diagnosis can be established by finding persisting secretory activity in material taken by biopsy or curettage on the fourth day of bleeding, or by persistence of elevated basal body temperature into the bleeding phase. Such patients generally respond to small doses of estrogen starting a week prior to menstruation and continuing through th ethird day of bleeding.

Dr. Sutherland wisely emphasized the importance of time in alleviating many fuctional menstrual disturbances. As said, in the younger group of patients this alone is most often sufficient. However, if early hemostasis is required and a curettage is not felt necessary for diagnosis, many cases can be controlled with intravenous estrogen therapy. I have found a definite place for the use of intravenous premarin given well diulted. Since the hemostasis secured lasts only 8 to 36 hours it is advisable to begin immediately the oral cyclic

(*Continued on page* 192)

INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW

JOSEPH P. MELVIN, Jr., M.D. .... Cardiology
HARVEY F. GARRISON, Sr., M.D .... Pediatrics
JAMES D. HARDY, M.D., and STAFF, Department of Surgery, University Medical Center .... Surgery

CARDIOLOGY

Effect of Chlorothiazide On the Edema of Cirrhosis, Nephrosis, Congestive Heart Failure and Chronic Renal Insufficiency

Authors: George E. Schreiner, M.D., and H. Allen Bloomer, M.D., Washington, D. C., Department of Medicine, Georgetown University Medical Center.

Chlorothiazide, a non-mercurial diuretic agent, has aroused considerable interest, following the investigative studies demonstrating a potent sodium and chloride diuresis effect. The mode of action is, presumably, partial blockage of renal tubular re-absorption of sodium and chloride, which is not reduced by salt deprivation, steroid administration or acidosis. Its action is not that of a carbonic anhydrase inhibitor, having only about one twenty-fifth the potency of diamox. In this study, the drug was given to thirty-six patients, including five with cirrhosis of the liver, twelve with nephrotic syndrome, six with congestive heart failure and thirteen with varying degrees of chronic renal insufficiency. All of these patients, of course, were edematous and in this study, chlorothiazide was found to be a potent, beneficial and safe diuretic agent in edematous states, except those accompanied by severe reduction in glomerular filtration rate. It enhances the excretion of sodium, potassium and chloride and may produce selective or combined hyponatremia, hypochloremia, hypokaliemia and mild alkalosis if administered continuously to patients with poor dietary intake of these electrolytes. With the exception of occasional lethargy, nausea and paresthesia, toxic effects have not been noted in this series of patients.

This drug seems to be especially indicated in the edema of chronic renal insufficiency because of the dangers of mercurial diuretics and the marked acidosis in these patients, which sharply limits the value of diamox. At a dosage of 5 mg. per kilogram of body weight, significant negative balances of sodium chloride and water in edematous patients with edema, were achieved. The diuretic response was prompt and began in a few hours from ingestion and, in many cases, there appeared to be an increase in salt excretion on the second and third days of administration, suggesting that intermittent dosage might be more effective in three-day blocks, than on an interrupted one-day schedule. No apparent benefit was derived from the use of higher dose levels in these patients. In addition to these therapeutic applications, chlorothiazide poses a new challenge to the theoretical understanding of the tubular reabsorption of chloride and sodium. Apparent maximum rather than dose-responsive effect and the fact that it appears additive to, rather than competitive with, known diuretic agents, will invite speculation about the specificity of its renal tubular blockade.

COMMENT: Review of this and other articles suggests that chlorothiazide (Diuril—marketed by Merck, Sharp and Dohme) is the most effective oral diuretic that we have available at the present time. The fact that it has an additive effect when combined with sodium restriction, or with other types of diuretic therapy, make it an especially valuable one and its relative safety in the presence of chronic renal diseases, represents a major advance in diuretic therapy. It is of interest that the drug does not act as a diuretic, except in edematous patients. This drug is also in the process of being investigated as an antihypertensive medication and has been found not to have any significant hypotensive effect in normal patients, but to be significantly efficacious in the hypertensive individual. We will hear a great deal more about this drug in the future.

PEDIATRICS

PATIENTS WITH INFANTILE PRIMARY TUBERCULOSIS TREATED WITH PROTECTED CORTISONE THERAPY. A. Del Principe, E. Canova and R. Potenza. Lotta contro tuberc. 27:80-89 (Jan.-Feb.) 1957 (In Italian) (Rome, Italy).

Fifteen children, 2 to 12 years old, 3 with adenopathy, 9 with various forms of tuberculosis, and 3 with exudative pleurisy were treated with cortisone combined with antibiotics. Each child received a dose of 0.5 mg. per kilogram of body weight per day of prednisolone combined with 20 mg. of streptomycin and 10 mg. of isoniazid per kilogram per day. Prednisolone was administered for an average of 15 days; it was discontinued after 7 days in 1 child and after 12 days in 2 children. Suspension of cortisone therapy caused the return of the symptoms present before the treatment in 1 child. A second course of prednisolone which lasted 15 days had a beneficial effect in this child. A first course of treatment did not have much effect on 1 patient, but a second course given after 3 months had a marked beneficial effect. Antibiotic therapy was always continued after the suspension of cortisone therapy. Best results were observed even after 2 or 3 days of treatment in the children with pleurisy, and good results were obtained in the children with adenopathy. The treatment had no effect on one child with simple tracheobronchial adenopathy. Improvement of the general condition of the patients was obtained in a short time: the fever dropped and the body weight increased. Erythrosedimentation rate became normal even before the suspension of the treatment. Glycemia and diuresis were always normal. All of the children treated are close to recovery.

COMMENT:

Apparently this is a very interesting experience with the authors in the administration of cortisone as a therapeutic measure in the treatment of the infantile primary tuberculosis. We would look on this somewhat as a hope that the apparent relief in these cases would be permanent but we would be inclined to think that it would be more palliative than permanent.

NATIONAL ARTHRITIS AND RHEUMATISM FOUNDATION

The Louisiana Chapter of the Arthritis and Rheumatism Foundation is having a seminar on rheumatic diseases on February 1 at Tulane Medical School Auditorium. Physicians from not only Louisiana but Mississippi also will be welcome.

Advance registration requested. No fee.

COURTESY CARD

WALTER S. RIDGWAY M. D.
Certified by American Board
of Obstetrics and Gynecology
216 Medical Arts Building
JACKSON, MISSISSIPPI

OVARIAN FAILURE . . .

(*Continued from page* 190)

estrogen therapy outlined by Dr. Sutherland. Additionally, it is sometimes amazing how effective the prompt restoration of blood loss by transfusion can be in stopping functional hemorrhage.

I would like to add my support to Dr. Sutherland's statement that there is clinical evidence that progesterone is often of value in restoring more normal menstrual function in many problems of functional bleeding. I won't go as far as Holmstrom who has said that almost all such problems can be managed by progesterone alone, but have found it especially useful in patients who at curettage are found to have adequate estrogenic stimulation. I concur that curettage alone will relieve 50 per cent of such patients but believe that the addition of cyclic progesterone will boost this to over 90 per cent. Many forms of progesterone are effective. I use progesterone in oil 25 mg. intramuscularly on the 23rd and 25th days after the curettage, repeating this in the next one or two cycles. I think this form of treatment is also applicable to some patients who because of youth and near intact blood volume do not require curettage for exclusion of organic pathology or estrogens for immediate hemostasis.

Testosterone is, in my opinion, of primary value in patients with organic pathology (such as adenomyosis and submucus fibroid) where for some reason definitive treatment must be temporarily postponed. It will control bleeding in the younger patient with functional bleeding but rarely better than estrogen and carries the very real risk of virilization. Very small doses in the adolescent with even slight acne will definitely aggravate that problem. Cessation of treatment will allow regression of the acne, but occasionally as little as two injections of 50 mg. testosterone each will produce voice coarsening prior to appearance of acne and many believe this is a permanent change.

In reference to x-ray stimulation of the ovaries, many of us are glad that there are brave ones to continue its use but will wait for the elapse of more years and better controlled studies before adopting it. Dr. Sutherland is on safe ground in exhausting all other measures prior to its use.

In conclusion let me observe that many of us are less enthusiastic about the use of thyroid in the euthyroid patient with ovarian dysfunction than is Dr. Sutherland.

MISSISSIPPI ACADEMY OF GENERAL PRACTICE

ANOTHER YEAR

1957 is gone and a new year lies ahead. Last year was a good one for the Academy. It was a record-breaker for attendance and number of exhibitors at the Annual Assembly. In education, more opportunities than ever were offered to the members. In one area, however, there is a great deal of room for improvement—membership.

That is the challenge of 1958. At present only one out of three Mississippi general practitioners under 65 are members of the Academy. Many of these non-member physicians are good doctors, and they are just as faithful as we are in attending post-graduate courses and meetings.

Our job is one of selling these men on the Academy. This can be done only if we take the time to speak to them personally and answer their questions. Our organization is a good one - but no matter how good it is, it cannot sell itself. Those of us who know its value must do it.

Aside from the intangible benefits of belonging to a group with high ideals and objectives, there are several very tangible ones. GP, the monthly magazine of the Academy, is familiar to nearly everyone. It is the undisputed leader in its field. The Annual Assembly of the Mississippi Academy and its one-day Seminars are Grade A Post-graduate courses.

The AAGP insurance plans, open only to members, are some of the many dividends of membership. There are four: (1) The Plus Plan (professional liability), (2) Health and Accident coverage, (3) Catastrophic illness coverage, and (4) Office overhead insurance (which is Tax Deductible).

Academy members give as well as receive. Fifteen members are on the faculty of the University of Mississippi School of Medicine and offer their skills and talents to train medical students. The Academy pays half the subscription to GP for senior students who want it. (Almost two-thirds do.) Members have devoted time to planning post-graduate study courses in cooperation with the American Cancer Society, the Medical School, and others.

All this adds up to one inescapable fact: The Academy is the focus of all that is good in general practice. It speaks for general practice and its voice is listened to by others—present and future is to make all family doctoors—present and future—better physicians, with all the respect and prestige that accompanies improvement.

Academy membership is a stamp of quality. Let us embark on this new year with the intent of putting that stamp on every family doctor in Mississippi who deserves it.

NEWS BITS

William E. Lotterhos of Jackson assumed the duties of president of the Central Medical Society last month. James R. Cavett, Jr., is secretary.

Louis F. Rittelmeyer, Jr., of Jackson was elected Chairman of the Residency Review Committee for General Practice.

J. P. Culpepper, Jr., of Hattiesburg, retiring President of the Southern Medical Association, presided over the recent meeting in Miami Beach.

The New Orleans Graduate Medical Assembly has been approved for Category I (formal) credit by the Commission on Education of AAGP.

The Alabama Academy of General Practice will hold its Annual Assembly on January 15 and 16 in Birmingham.

The Louisiana Academy has started collecting money for a building fund, to be used for erecting an office in New Orleans.

DON'T FORGET

The Post-graduate Seminar—with round-table discussions at the Hotel Heidelberg in Jackson on January 22. No registration fee. Five hours Category I (formal) credit will be earned.

BEWARE . . . TAKE CARE

Not since the days of Oscar Ewing has the medical profession been faced with a more socialistic bill than H.R. 9467.

Introduced by a Rhode Island Representative, if enacted it will give free hospitalization to all Social Security recipients.

It provides for a total of 120 days free hospitalization in a general hospital or nursing home per year, for an estimated 12,000,000 people.

The hospitals who will benefit by it are very interested.

You, the doctor, should be also, but mainly in its *defeat*.

You, the doctor, should *beware*.

For another slice of your practice is being surreptitiously removed.

Take care . . . write, or better still, call your Senators and Representatives, voice your objection.

Delaying now means socialized medicine and slavery tomorrow.

—*Worcester Medical News*

President's Page

Every physician-member can insure his MSMA a happy, prosperous New Year by giving immediate attention to an important organizational detail. This is the matter of annual dues which support our independent, private effort to advance and increase medicine's potential of service. Many physicians have already paid their 1958 dues to the secretary of the local medical society; for them, this message is more of an affirmation than an appeal.

Speaking from some ten years' personal experience, I can state that the secretary of your local society will be grateful for your responding voluntarily with your dues. His is a difficult, time-consuming task, carried out solely in your interest. This important officer is at times an unfortunate middle man. He works actively with our state association and the AMA in your interest and is, in fact, your personal representative and spokesman to the higher levels of medical organization which you own and operate.

For a vast majority of active members, 1958 local, state, and AMA dues are now payable. Of course, local dues vary from society to society based upon your own estimates of special needs. Many societies collect in one lump sum funds needed for local activities throughout the year; others prescribe minimal dues, relying upon assessments, contributions, and special charges as funding needs arise. Our state dues for 1958 are $45 and AMA is $25.

It is interesting to know something of dues structures in other state medical associations. Physicians in larger cities throughout the nation usually pay greater local society dues than are involved in those of the state association and AMA. A recent study shows that urban medical societies, having their own executive offices, charge dues ranging up as much as $100 per year. These programs pay off positively in terms of service, organizational activity, public relations, medical care plans, emergency call systems, and community service projects.

Most physicians in the United States pay greater state dues than we do in Mississippi. State medical association dues range as high as $100 per year and the national median is about $65. More than half the states in the nation have dues larger than MSMA including our own neighboring states of Alabama and Louisiana. Most of these higher dues range states have memberships from two to four times greater than MSMA. We can, therefore, appreciate that we have a tremendous program of service on a minimum dollar basis. Actually, our state dues account for less than 7 per cent of dollar volume handled by MSMA since the advent of the Medicare program.

AMA dues probably represent one of medicine's best bargains. Our AMA has an annual budget of around $10-millions but total revenues from dues amount to only about one-third of this figure. Each AMA member, therefore, receives about $75 in services for his $25 annual dues. Nearly $5-millions in the AMA budget is derived from scientific publications and other sources such as the gigantic annual clinical sessions, investments, and certain sales provide the remainder of funds. The AMA House of Delegates and Board of Trustees are to be commended on holding dues at the modest level of $25 when the gigantic program and financial needs are considered.

A vast majority of physicians understand the financial needs of medical organization. They realize that many labor unions pay much more in dues than do doctors of medicine. It must also be realized that membership and participation in medical organization is purely voluntary; it is not necessary to be a member of MSMA to hold a license to practice medicine in Mississippi. This is as it should be for it is a living declaration of medicine's purpose in seeking freedom of choice, the best possible medical care for all, and perpetuation of the free enterprise climate.

There are many willing, able hands to do MSMA's work and many more at the local and national levels. Individuals can give generally of their time and personal substance but money is required for the implementation and execution of broad, vital programs directed by the membership. Your dues dollar is the difference in this service.

Our MSMA has entered upon its 102nd year of service to the profession and people of Mississippi. We are contributing much in the way of leadership at the national level. If you haven't mailed the secretary of your local society your check, do so today as an affirmation of your support for and faith in the profession of medicine.

Howard A. Nelson, M.D., President

Medical School Miscellany

MEDICAL CENTER MISCELLANY

Although loss of limb no longer implies loss of life, as the familiar phrase would have it, all too often it still does mean loss of living.

Such needn't be the case.

A team approach to rehabilitating the amputee, combining the surgeon's skill, the prosthetist's art and the physical therapist's instructions, can take the man who's lost a limb off the shelf and put him back to normal living.

Such a team approach will be demonstrated in a one-day seminar on Recent Advances in Artificial Limbs and Amputations at the University Medical Center on Friday, Feb. 28.

Presented by the Department of Surgery, Orthopedics division, with the assistance of the Mississippi Vocational Rehabilitation division, the program is open to interested physicians without charge.

An eight-man faculty will discuss practical aspects of preparing patients for artificial limb function with emphasis on what can be done for problem cases. Both adult and child amputees will show properly fitted and functioning artificial limbs.

Lower and upper extremity amputations will be explained by Dr. Donald T. Imrie of Vicksburg, clinical assistant professor of orthopedics, and Dr. W. F. Enneking, associate professor of orthopedics. Dr. William C. Warner, clinical instructor in orthopedics, will talk on amputations in children.

W. W. Fulton, instructor in orthopedics and chief physical therapist for University hospital, will explain pre-prosthetic therapy after which Dr. Enneking will talk on fabrication principles and techniques for upper and lower extremities.

Further demonstrations of lower and upper extremity amputees and artificial limbs will be given by Dr. Enneking and Dr. Imrie, with children's amputees to be shown by Dr. John G. Caden, Jr., clinical instructor in orthopedics.

Representatives of two artificial limb companies, Claude L. Brown, B. J. Holland and Lawrence Phillips, will participate in the program.

Attendance will be accepted for five hours Category 1 credit towards the postgraduate educational requirements of the Mississippi Academy of General Practice.

Pathologist Joins Staff

A native Latvian, now a naturalized American citizen, has been named to the School of Medicine faculty.

Dr. Ciprijans Garancs assumed his duties as associate professor of pathology on December 6, coming to the Medical Center from Fort Baker, San Francisco, California, where he had been a captain in the U. S. Army. Dr. Garancs replaces Dr. E. E. Pautler.

The 36-year-old pathologist attended Latvia State University at Riga and graduated from the University of Heidelberg in 1948. He interned at St. Mary's hospital, Passaic, N. J., and took his residency training at Doctors Hospital, St. Luke's Hospital, and Western Reserve, all in Cleveland, Ohio. He had been in the army for two years prior to coming to Jackson.

Student News

Eight senior nurses got their caps and pins in a ceremony at the Medical Center on Dec. 20. They'll receive their B.S. degrees in nursing at the School of Medicine commencement in June.

Russell Staudacher, executive secretary of the Student American Medical Association, visited the Medical Center SAMA chapter in December. Officers of the reactivated Mississippi chapter are Gus Brown of Iuka, president, Glen Warren of Purvis, vice-president, and Jim DeRuiter of Edwards, secretary-treasurer.

Phi Chi alumni officers are conducting a fund-raising campaign to help pay for the medical fraternity's house on Lakeland Drive. Dr. Charles Neill of Jackson is alumni president.

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $3.00.

Published monthly at 104 Hospitality Street, Booneville, Mississippi. Return postage guaranteed.

W. H. ANDERSON, M.D. .... Editor-in-Chief
MILDRED P. ANDERSON .... Assistant Editor

MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY

C. W. Patterson, M.D. .... President
Rosedale, Miss.
J. Max Roy, M.D. .... President-elect
Forrest City, Ark.
C. L. Chumley, M.D. .... Vice-President
Nashville, Tenn.
Lon E. Reed, M.D. .... Vice-President
Hot Springs, Ark.
R. B. Cunningham, M.D. .... Vice-President
Booneville, Miss.
Thurman Crawford, M.D. .... Secretary-Treasurer
Memphis, Tenn.

Mid-South Associate Editors

H. King Wade, M.D. .... Hot Springs, Ark.
R. L. Sanders, M.D. .... Memphis, Tenn.
Frank M. Acree, M.D. .... Greenville, Miss.

MISSISSIPPI STATE MEDICAL ASSOCIATION

Howard A. Nelson, M.D. .... Greenwood
President
Guy T. Vise, M.D. .... Meridian
President-elect
Geo. W. Twente, M.D. .... Jackson
Secretary
Rowland B. Kennedy .... Jackson
Executive Secretary

State Associate Editors

Louis F. Rittelmeyer, M.D. .... Jackson, Miss.
John T. Bryan, M.D. .... Meridian, Miss.

The Publication Committee is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.

Address all material for publication to W. H. Anderson, M.D., 104 Hospitality Street, Booneville, Mississippi.

YOU CAN HELP

Last January, the Junior League of Jackson began a kindergarten for pre-school blind children at the Mississippi School for the Blind in Jackson. It was the first and only opportunity for any blind or partially sighted child up to 7 years of age in the state to receive any help or instruction, and it has proved a most successful and rewarding project.

One of thee problems confronting both the Junior League and the Mississippi School for the Blind, however, is the difficulty in reaching all blind children throughout the state. No survey has ever been made, and for that reason, many blind and partially sighted children have gone without valuable help and education. Conversely, many of the parents are not aware of the school and the opportunities it offers.

The Junior League is requesting the help of doctors throughout the state to send them the names of any children who are either totally blind or partially sighted so that they might receive information about the school and its opportunities. The information requested includes the name, race, sex, age, cause of blindness, and parents name and address. Send to: Mrs. J. Harvey Johnston, Jr., Mississippi School for the Blind, Jackson, Mississippi.

It is hoped that all doctors with this information will cooperate in this rewarding project.

DR. HENRY BOSWELL

Every doctor in Mississippi feels a loss in the death of Dr. Henry Boswell. All acknowledge pride in the great work he did in the field of tuberculosis, to which cause he gave his entire devotion. As hospital administrator, executive, hospital economist, and diplomat, his wisdom kept him at the top. Nor will his work as educator in the prevention of tuberculosis stop with his death. Whether he was presenting his cause to a governor, a legislative group, or filling his place on a board or commission, the impact of his character and personality was dynamic and unforgettable. We mourn his passing.

MAKE YOUR RESERVATION FOR THE MID-SOUTH

Make your reservation for the Mid-South Postgraduate Medical Assembly meeting, February 11-14. Dr. C. W. Patterson of Rosedale is the president. A faithful member for more than forty years, he attended the Mid-South when it was the Tri-State Medical Society; and active in organized medicine, he has made a consistent contribution to this and other professional groups.

The program for this year promises to be unusually good. This association is one of the first and best of its kind. It offers a fine opportunity for doctors to get a practicable review of the latest in medicine and surgery. The fellowship is always superb. The atmosphere of the Peabody is cordial, and Memphis breathes the air of medical progress.

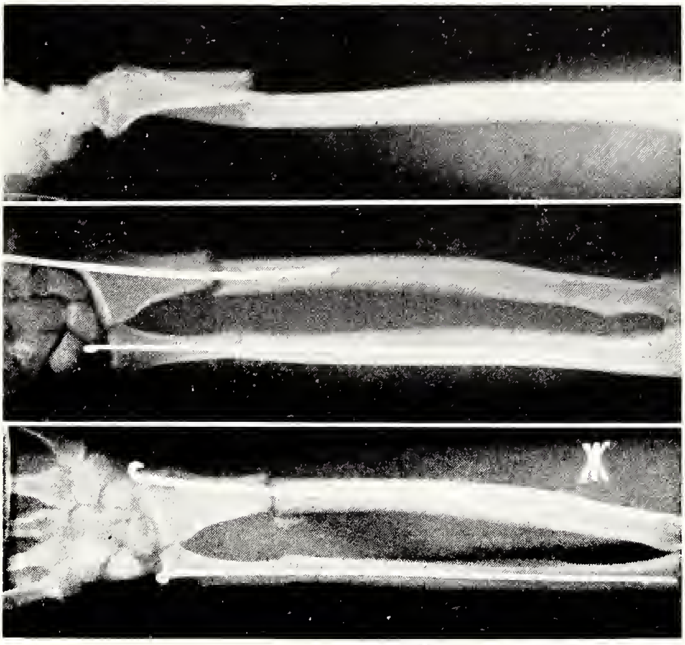
One can now estimate the price of his automobile by the pound—$1.00 a pound.

FRACTURE PROBLEMS

Leslie V. Rush, M.D.
Meridian, Miss.

Problem No. 11 of a Series

LOWER THIRD FOREARM — PROBLEM ANGULATION



Male, age 20. In this case the ulna fracture was not displaced and the fracture line was irregular, so it seemed best to pin this fracture blind. On the first attempt the awl-reamer opening was made at a bad angle, insertion of the pin produced medial angulation. The pin was removed and replaced in a better direction. This improved, but did not completely correct the angulation.

In open operation, angulation could have been completely avoided by making the opening in the distal fragment retrograde from the fracture with the awl-reamer, using this instrument as a grooved director for inserting the pin from the distal end. A long pin driven downward from the olecranon would have distracted this fracture. This is a poor healing area and angulation, distraction, and rotary stress must be avoided.

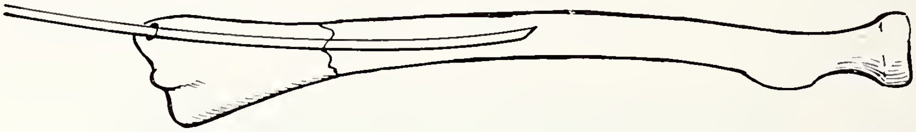
THE RADIUS: Note that on the first attempt the pin entered the distal fragment at a bad angle. This produced angulation and distraction, so a better insertion was necessary. It would have been easier to enter from the dorsum, but this would have placed the head of the pin beneath the tendons which could produce bursa formation and make removal of the pin most difficult.

The angulation was largely corrected by making a new opening, inserting the awl-reamer at an angle more closely approximating the axis of the shaft. This was somewhat difficult because of the patient's age, the cancellous bone being dense.

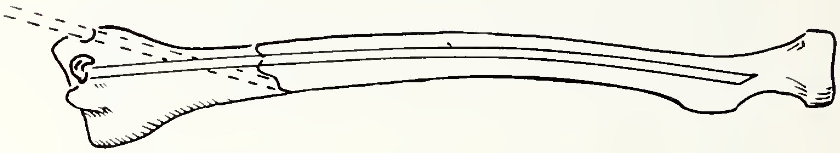
In older patients, angulation of short fragments is much less a problem because the cancellous bone is much less dense, making proper insertion of the pin easier. But by the same token, fixation is less stable.

Note that the medullary canals are small. In the ulna it was necessary to use the "special" forearm pin (3/32 inch diameter). In the radius a 1/8 inch pin was used for stability of fixation. The pin is short because a longer pin would not pass the isthmus of the canal.

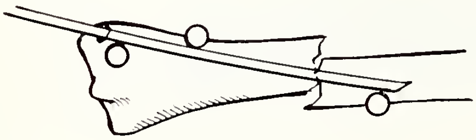
RADIUS LOWER THIRD: ANGLE OF INSERTION IMPORTANT

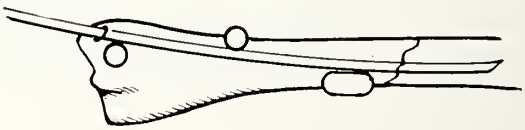


If angulation is to be avoided in a short distal fragment the axis of the pin must closely approximate the axis of the bone.

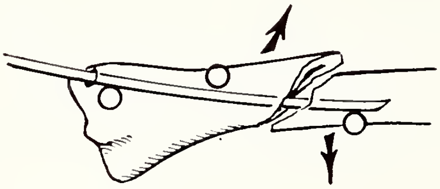


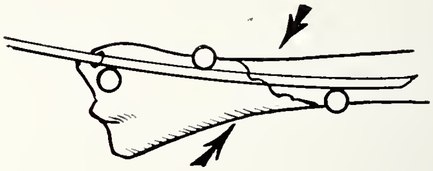
The shape of the lower end of the radius is sometimes bulbous with the cortex curved in such fashion that this angle of insertion is impossible. It then becomes necessary to insert the pin at a point more to the dorsum.





The length of the fragment is important. These pins enter the bone at the same angle. In the short fragment angulation occurs due to lack of three-point-pressure. In the longer fragment three-point-pressure deflects the point to the axial direction and angulation does not occur.



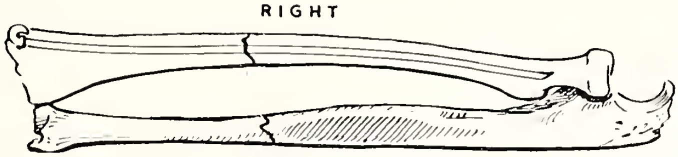


In an oblique fracture, the direction of the fracture line is important. Here the pin is introduced at the same angle in both fractures. In the first, angulation and distraction occurs; in the second, good alignment and compression results.

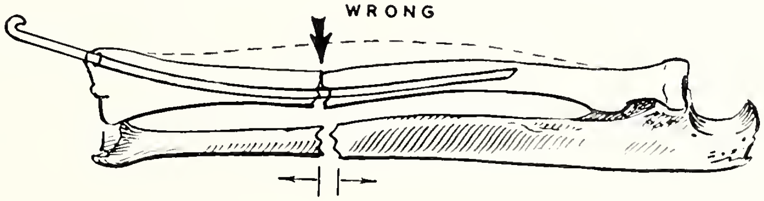
The same dynamic force is exerted by the pin in both fractures. But the directions of the respective fracture lines are diametrically opposed so that in the one case the dynamic result is hurtful, while in the other it is helpful.

PROPER UNDERSTANDING OF THIS PRINCIPLE CAN MAKE THE DIFFERENCE BETWEEN NON-UNION AND RAPID UNION.

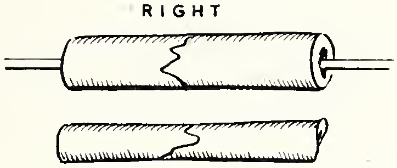
ULNA SHAFT PROBLEMS

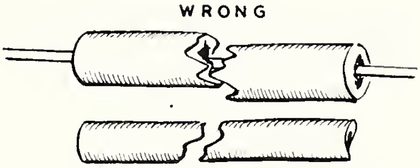


The ulna, rather than the radius, presents most of the healing problems. The radius usually heals kindly if given the proper opportunity, because it enjoys less tendency to rocking, distraction, and rotary stress. The latter is due to the fact that in rotation of the forearm, the ulna is the pivot upon which the radius glides. Improper handling of either bone can be reflected in the poor healing of its fellow.

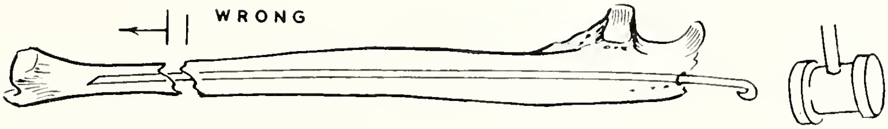


If the radius pin is introduced at too great an angle to the long axis of the bone, it is preshaped into a severe curve within the bone as it is forced through the distal fragment. Result: Narrowing of the interosseous space and distraction of the ulna fracture. This is due to the loss of the normal curve of the radius shaft which produces relative lengthening of the radius and resultant distraction of the ulna fracture.

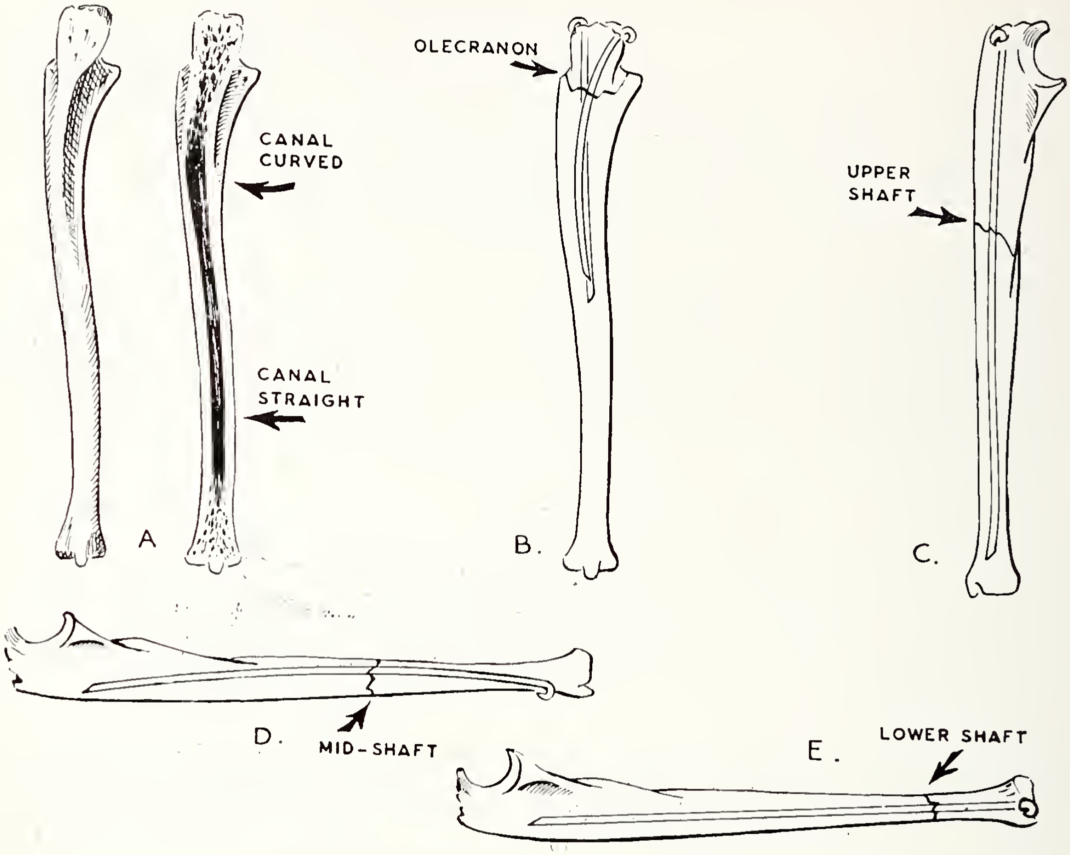




Incomplete reduction of an irregular fracture can produce the same result in a similar manner to produce distraction and poor healing of its fellow.



Bad technic. Result: Distraction. Pin would better have been introduced upward from the distal end of the ulna. In either event a passage for the pin should be prepared in the cancellous bone by introducing the awl-reamer retrograde from the fracture site through the distal fragment. If such a fracture is irregular, rotary stress may not be present, but if the fracture is smooth, external splinting is necessary to prevent rotation.



ULNA REQUIRES SELECTIVE TECHNICS

(A) SHAPE OF THE ULNA. The upper half of this bone is tortuous. A straight pin driven into this part of the bone is forced into a curve and secures good fixation by three point pressure. The distal shaft is straight and tubular. A straight pin in this fragment will not control rotation.

(B) OLECRANON. Two Pins (3/32 inch) give better fixation than a single larger pin.

(C) PROXIMAL SHAFT. Single pin (1/8 inch) driven down from radial side of olecranon gives best fixation. Pin should have adequate length to prevent upward migration because of motion from triceps pull.

(D) MID-SHAFT. Best fixed with pin (1/8 inch) introduced from the side of the distal fragment and driven upward. This provides three point pressure for fixation of distal fragment and firm fixation of proximal fragment.

(E) DISTAL SHAFT. This area is treacherous. Make retrograde opening from fracture line in distal fragment. Insert straight pin upward from distal end. Unless fixation is stable (irregular fracture line), splint to prevent rotary stress.

EXHIBITORS

MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY

Abbott Laboratories, North Chicago, Ill.
Ayerst Laboratories, New York, N. Y.
Baby Development Clinic, Chicago, Ill.
Beltone Hearing Service, Memphis, Tenn.
Brayten Pharmaceutical Company, Chattanooga, Tenn.
Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N. Y.
Carnation Company, Los Angeles, Calif.
Carroll-Dunham-Smith Pharmacal Co., New Brunswick, N. J.
Delta Surgical Inc., Memphis, Tenn.
Desitin Chemical Company, Providence, R. I.
The Dick X-Ray Company, Memphis, Tenn.
Eaton Laboratories, Norwich, N. Y.
Encyclopedia Americana, Grand Rapids, Mich.
C. B. Fleet Co. Inc., Lynchburg, Va.
General Electric Co., X-Ray Dept., Memphis, Tenn.
Gerber Products Company, Fremont, Mich.
H. J. Heinz Company, Pittsburgh, Pa.
Kay Surgical, Incorporated, Memphis, Tenn.
Knoll Pharmaceutical Company, Orange, N. J.
Lederle Laboratories Division, American Cyanamid Company, Pearl River, N. Y.
Eli Lilly and Company, Indianapolis, Ind.
J. B. Lippincott Company, Philadelphia, Pa.
J. A. Majors Company, Dallas, Texas
The S. E. Massengill Company, Bristol, Tenn.
Mead Johnson & Company, Evansville, Ind.
Medco Products Co. Inc., Tulsa, Okla.
The Mennen Company, Morristown, N. J.
Merck Sharp & Dohme, Div. of Merck & Co. Inc., Philadelphia, Pa.
The Wm. S. Merrell Company, Cincinnati, Ohio
Miller Surgical Company, Chicago, Ill.
The National Drug Company, Philadelphia, Pa.
Organon Inc., Orange, N. J.
Ortho Pharmaceutical Corporation, Raritan, N. J.
Parke, Davis & Company, Detroit, Mich.
Pet Milk Company, St. Louis, Mo.
Pfizer Laboratories, Brooklyn, N. Y.
Picker X-Ray, Mississippi Valley, Inc., Memphis, Tenn.
Plough, Inc., Memphis, Tenn.
Wm. P. Poythress & Co. Inc., Richmond, Va.
R. J. Reynolds Tobacco Company, Winston-Salem, N. C.
The Rhinopto Company, Inc., Dallas, Texas
Riker Laboratories, Inc., Los Angeles, Calif.
A. H. Robins Company, Inc., Richmond, Va.
Roche Laboratories, Div. of Hoffmann-LaRoche Inc., Nutley, N. J.
William H. Rorer, Inc., Philadelphia, Pa.
Ross Laboratories, Columbus, Ohio
Sandoz Pharmaceuticals, Hanover, N. J.
Schering Corporation, Bloomfield, N. J.
G. D. Searle & Co., Chicago, Ill.
Chas. O. Snoddy Surgical Appliances, Memphis, Tenn.
Southern Surgical Supply Co., Memphis, Tenn.
E. R. Squibb & Sons, Div. of Olin Mathieson Chemical Corp., New York, N. Y.
Wm. T. Stover Co. Inc., Little Rock, Ark.
The Stuart Company, Chicago, Ill.
Table Rock Laboratories, Inc., Greenville, S. C.
The Upjohn Company, Kalamazoo, Mich.
U. S. Vitamin Corporation, New York, N. Y.
Vogel X-Ray Company, Memphis, Tenn.
Walker Laboratories, Inc., Mount Vernon, N. Y.
The Warren-Teed Products Company, Columbus, Ohio
Westwood Pharmaceuticals, Div. Foster-Milburn Co., Buffalo, N. Y.
White Laboratories, Inc., Kenilworth, N. J.
Winthrop Laboratories Inc., New York, N. Y.

SCIENTIFIC EXHIBITS

Robert E. Ryan, M. D., St. Louis, Mo.
Univ. of Tennessee, School oof Technology, Memphis, Tenn.
Shelby County Tuberculosis & Health Assn., Memphis, Tenn.

DR. SAM NEWELL

Dr. Samuel Doak Newell died of a heart attack while on duty in his clinic in Inverness Thursday morning, Oct. 24.

Dr. Newell was born in Pontotoc County, Miss., Sept. 4, 1882, the youngest son of Samuel Lafayette Newell and Elizabeth Peden Mooney Newell. He was graduated from the Medical School of the University of Tennessee.

Dr. Newell first practiced medicine at Paris, Miss. He had been a physician in Inverness for 38 years. He served 18 months as a captain in World War I in England, Scotland, France and Russia.

He was a past president of the Inverness Rotary Club and a Mason.

A group of Inverness Negro singers led by Jerry Herrington, sang "Swing Low, Sweet Chariot" at the grave. Dr. Newell had requested them several years before his death to sing this song at his funeral.

Dr. Newell leaves his wife, Mrs. Orrie Womble Newell; two sons, Dean Newell of Inverness, and William E. Newell of Harbor City, Calif.; one daughter, Mrs. Thomas J. Cole, Jr., of Amory, Miss.; three sisters, Mrs. Lula Rich and Mrs. Lee Rowland of Marks, and Mrs. Emma Saunders of Ripley, Miss., and 17 grandchildren.

TAKE A THRIFTY VACATIO
STAY AT...
the Lafayette HOTEL
628 St. Charles St., New Orleans 12, La.
New Orleans
You can invest very little . . ., yet enjoy the glamor and fascination New Orleans offers. Spacious airy rooms, complete with all comforts and conveniences, including radio, air conditioning and the BEST in service. In the Commercial Center on Lafayette Square clo to all main New Orleans activities.

The Most for your Travel Dollar from $5.00

SENILE ZOL *for the* *and aged*

Senility causes in many individuals mental states characterized by mild memory defects, confusion, and abnormal behavior. These symptoms may be successfully treated with . . .

SENILEZOL

Each 5cc Elixir or Tablet SENILEZOL
contains: 100 mg. Pentylenetetrazol
50 mg. Nicotinic Acid

An elixir of pentylenetetrazol and nicotinic acid was used on 30 patients (61 to 88 years old, with the average age being 74)*

"It seems especially helpful in combating symptoms of abnormal behavior . . . the symptoms that are most objectionable to the family." In . . . "those suffering from cerebral arteriosclerosis or senility . . . there was an average improvement in the I.Q. of 9 points."

The most important advances in the patients were in feelings and sociability. Their outlook was brightened and they were easier to live with.

Self care for the
senile and aged
IN THE HOME

After therapy with the drugs combined in SENILEZOL: " . . . 48% of the patients who previously had to be assisted with their personal needs were able to take care of their *personal hygiene* and to attend to their personal needs alone."

ADULT DOSE: One tablet or one teaspoon for three times daily. In severe cases this dose may be doubled.

SUPPLIED
ELIXIR: In pints
TABLETS: Bottles of 100

*Reference: Levy, S. JAMA, December 1953, pp 1260-65.

Edwards PHARMACAL COMPANY
1474 S. Trezevant
Memphis, Tennessee

A Southern Company

Automotive Accidents*

FLETCHER D. WOODWARD, M.D.†
Charlottesville, Virginia

THE OLD SAYING that accidents will happen is particularly true if applied to automotive vehicles and since accidents produce deaths and injuries, we must accept a certain basic number as inevitable in our complex and mobile society. This appalling number can be substantially reduced perhaps by one-half if we are willing to apply the remedies we now have.

The magnitude of this problem is indicated by the fact that there is one death and twenty-five injuries every ten minutes from an accident rate of one every three seconds. In all our wars less than one million men have been killed. The automobile counted its one-billionth victim five years ago, and the rate has been accelerating since with increased horsepower.

In 1925 there were twenty million automobiles, and the death rate per one hundred million miles was nineteen. In 1955 there were sixty million automobiles, and the death rate had been reduced to 6.4. This was a most gratifying improvement. The credit for this is due to the automobile manufacturers, the police, and the many national, state and local safety organizations whose indefatigable work over the years made this improvement possible. Unfortunately, this figure of 6.4 is now practically a static one, and only by running hard can we hope to stand still.

To impress one further with other aspects of this problem, the Allstate Insurance Company, one of the nation's largest, reported its profits at less than $100,000 for the first half of 1956. For a similar period in the preceding year they were $10,500,000. The State Farm Mutual reported its injury claims up 13 per cent for the first half of 1956. Automobile liability rates were recently raised in New York, Pennsylvania and Rhode Island and no doubt many other states will soon need to do likewise. The Institute of Life Insurance says highway accidents in the past four years cost the life insurance companies more than did World War II.

Cardiovascular diseases and cancer are our two leading causes of death, but the automobile rate is close behind if figured on man years of life lost for the first two are primarily diseases of the older age groups, whereas the automobile fatality rate is highest in our younger age groups. The number one health problem in this country today is the carnage created by the automobiles.

The doctors who are called upon to pronounce death or treat those unfortunate victims night and day are greatly concerned with the fact that, although the rate is down to 6.4 deaths per one hundred million miles, there is a slow but steady increase in the total number of deaths and injuries which this year are expected to reach 40,000 and one and one-half million of this number of injured, 20 per cent will be classified as from severe to critical.

In a search for the causes of this tragic toll each year three factors stand out above all the rest: 1. The drinking driver: He is estimated to be involved in one-half of our fatal crashes each year. 2. The speeding driver: He is estimated to be involved in one-third of our fatal crashes. He is also listed as reckless, as driving on the wrong side of the road and is a frequent contributing factor in the drinking driver crashes. 3. Poorly designed automobiles from a safety standpoint: For instance, the average steering wheel collapses on impact at 12 mph, leaving the steering post as a lethal projection. Also, an unrestrained passenger is unable to protect himself from death or injury on impacts of 12 mph, and if thrown out, his chances of getting killed or injured are twice as great. The many projecting buttons and knobs and unpadded areas, along with many other poorly designed features from a safety standpoint, contribute to the large number of deaths and injuries directly due to poor design. The lives of thousands rest in the hands of a comparative handful of men who are the designers of next year's cars, and these designs are made and executed without benefit of medical advice or consideration.

It may be true that much research is needed before the final answers to many of these factors can be given, but enough facts are now at hand to prevent one-half or more of these deaths and injuries. If doctors had waited until all the facts were at hand before starting the control of typhoid, smallpox, malaria, yellow fever, venereal diseases and polio as examples, then the control of these scourges would have been long delayed.

Since the number one killer is the drinking driver, and since repeated tests have shown that driving skill deteriorates at an alcohol blood level of 0.03 to 0.05 per cent, then let's make 0.05 per cent the critical blood level for convictions instead of 0.15 per cent, a far too generous figure. Our present laws exonerating those below 0.05 and for the punishment of those above 0.15 per cent are adequate if enforced without discrimination. The routine suspension of the jail sentence is to be deplored.

---

*Presented before the sixty-ninth annual session of the Mid-South Postgraduate Medical Assembly, Memphis, Tennessee, February 11-14, 1958.

†Clinical Professor, Otolaryngology—University of Virginia Department of Medicine; Chairman—American Medical Association Committee on Medical Aspects of Automobile Crash Injuries and Deaths.

The great majority of accidents are due to the drinking driver, the social drinker who goes beyond his limit of one or two drinks of whiskey or one or two bottles of beer, and then attempts to drive a car at split-second timing in our present-day complex driving patterns.

We need a new set of laws to fit this problem. Let's make the employment of chemical tests mandatory in suspected cases or else provide an implied consent law. Let's make the results of chemical tests acceptable as evidence, and finally let's enact and enforce adequate laws without fear and with complete impartiality.

It is my opinion that it should be unlawful to drive a motor vehicle with an alcohol blood level of 0.05 per cent or greater on public roads. I would not be concerned whether this blood level was reached on an ascending or a descending curve of intoxication. I would not be concerned with either the kind of alcohol beverage consumed, the rapidity of consumption or whether consumed on a full or fasting stomach. I would not be concerned with whether the prima facie evidence available at the time of the accident indicated whether the individual was intoxicated or not. I would not be concerned whether the individual was an experienced drinker with a high degree of tolerance or a beginner. I would only be concerned with the fact that no one is safe when meeting a driver on the highway with 0.05 per cent or greater alcohol concentration in his blood.

Speed is our number two killer. We now have limited access to super highways and cars with unlimited horsepower, but remember there have been no advances or improvements in the design of the driver, and the timing between safety and crashing is only a split second, therefore, we must be realistic in establishing speed limits and ruthless in their enforcement. Thirty mph in urban zones, sixty mph on the highway during the day and fifty-five mph at night are certainly reasonable, and if the traffic officer allows a five mph tolerance for the violator there should be no valid objection to them or their enforcements. Of course, these limits should be uniform throughout the country.

The only redeeming feature in these two problems that exist today is the high quality of work being done by our police officers. However, they are far too few in number to cope with these problems and their zeal is bound to suffer when they are constantly faced with the apathy of the public, the legislator and the traffic court judge.

As for the number three killer of automobile design we must again educate the public to demand safety features as standard equipment. According to the annual reports, automotive crash injury research for the period April 1, 1956, to March, 1957, by Cornell University, New York City, the most frequent causes of injury are, 1) steering assembly, 2) ejections, 3) instrument panel, 4) windshield, 5) back of front seat, top portion, 6) door structures, 7) back of front seat, lower portion, 8) front corner post, 9) flying glass, 10) top structures, 11) rear view mirror.

The same study has shown that if restraining gear or lap belts or shoulder harnesses are worn, approximately 60 per cent of the deaths and injuries could have been prevented.

The most frequent body areas injured are 1) head and neck, 2) chest, 3) lower extremities, 4) upper extremities, 5) abdomen and pelvic.

The automotive industry should clean its own house, otherwise a federal agency will be sought to establish and require all the automobile manufacturers to meet certain minimum safety requirements. Several bills to this end have been introduced in Congress and there is a committee at this time conducting its own investigation. In addition to the bills in Congress, many state legislatures are considering similar legislation.

The first duty of the physician in the care of the injured is to see that adequate first aid is available and rendered and that proper transportation is provided. However, they also feel that ambulances and all other emergency vehicles should obey all traffic ordinances.

The physician's second duty is in the definitive care of the injured and of these results he is justifiably proud. The results of care of the injured in World War II were much better than those of World War I. There was a further improvement during the Korean conflict. Prompt and efficient first aid, better and prompt transportation, the treatment of shock, more blood transfusions, better anesthetic techniques, the use of antibiotics to control infection, and improved surgical techniques were all responsible for this gratifying improvement.

Although the physician is pleased with the results of definitive treatment he is not pleased with the preventive aspects of this problem. The American Medical Association realized that a certain undetermined percentage of accidents is caused directly or indirectly by medical conditions, drugs and other related physical factors and that it was our duty to clean our own house.

To this end the Board of Trustees established a committee to study the medical aspects of automotive crash injuries and deaths in 1956. This committee sponsored a symposium on this subject and has now prepared a pamphlet "Are You Fit to Drive?" to serve as a guide to the patient, written at the popular level concerning the more commonly encountered medical situations.

It is now preparing another pamphlet to serve as a guide to physicians in determining fitness to drive as related to the medical background of the individual. When completed this pamphlet will advise the physician relative to his patients' driving limitations that may be involved in, 1) physiological status 2) pathological conditions 3) emotional disturbances, and 4) drugs and alcohol.

A third objective will be to develop better medical standards for driver licensure which varies so widely today in the different states. A guide will also be prepared for examining police officers and for state agencies concerned with licensing with the hope that these standards will some day become uniform. Medical state traffic safety committees will be set up and will advise state licensing bodies in their efforts to improve medical standards in licensing.

One phase of active research is directed toward that small percentage of drivers which causes such a large percentage of accidents. This small group of around 10 per cent is composed of a rather constant but nebulous core of drivers called the accident prone group. This group is composed of the young maladjusted male with unbridled aggressiveness, also the alcoholic, the egocentric and the individual who has poor control over his emotions, domestic and other social situations. He is unstable, impulsive, irresponsible and insecure, in other words, he drives as he lives, as has been so aptly stated by Dr. Ross McFarland.

It is obvious that much more research is needed, but we have enough facts now at hand to curtail these injuries and deaths fifty or more per cent if followed. I propose further study of the four E's:

EDUCATION — Accredited driver education schools should be established in private, parochial and public high schools. There should also be accredited driver schools for the public.

All applicants for driver licensure should be required to present a certificate from such a school. The same certificate should also be required from those who are reapplying for driver licensure after suspension or revocation of their licenses.

Referral clinics staffed by physicians and psychologists should also be established. It would be their duty to pass on the fitness to drive of repeat offenders, those referred to it by the police, the court, the physician and those past 65 years of age at the time of their triennial examination. Such a referral clinic could be similar to the clinic which has worked so well for the Recorder's Court in Detroit.

ENACTMENT—By education of the public and the legislator, adequate laws can be enacted to adequately punish the drinking and speeding driver—laws far more stringent than any which now exist on our statute books. These laws need to provide higher fines and longer periods of permit revocation or suspension; mandatory jail sentences for the drinking driver with a minimum of at least one day in jail; mandatory drunkometer tests of suspected individuals, and the acceptance of the results of such tests as evidence of drunkenness. Last of all, suspension of longer sentences should be sharply curtailed.

ENFORCEMENT—More highway police officers are needed and the American Bar Association should educate the traffic court judges and juries to back them up. If the judge and jury could see the dead and mangled bodies seen by the police and the physicians, they would quickly meet this suggestion.

ENGINEERING — In addition to the vast amount of engineering now going into the design of our highways, I would like to see safer automobiles provided which would protect us in those accidents which seem to be inevitable. These features have been repeatedly enumerated by physicians and repeatedly ignored by designers and engineers of automobiles.

The magnitude of this problem is well recognized by the medical profession. The epidemiology is understood. The remedy is known and available, so why not let's get on with the treatment.

400 Locust Avenue
Charlottesville, Va.

Thromboembolism*

GEORGE S. BARNES, M.D.
and the late
J. F. LEWIS, M.D.
Columbus, Miss.

In 1950, Dr. Lewis gave a paper before this society on anticoagulants, in which he reviewed and propounded more careful and more widespread use of these agents. This paper, while carrying a rather broad and general title, is intended to be somewhat of a progress report on the use of anticoagulants in a small, fifty-bed hospital in the past seven years, together with a broad, somewhat general review of the subject.

There have been no essential changes in the usage of anticoagulants, albeit, several new anticoagulant drugs have been added to the repertory in the last several years. None of these newer drugs has replaced dicumarol in popularity or effectiveness. Perhaps, the only remarkable changes have been the gradual increase in the number of clinicians using heparin and dicumarol and related drugs, and the more extensive experience gained with the use of these agents.

A great many patients are now receiving dicumarol on long-term basis to prevent recurrence of thromboembolism (its use here includes thrombosis and/or embolism). Many of these patients, we are sure, are alive today because of this prophylaxis. Such long-term use is not new—it dates back ten years; yet there are probably too few physicians who will undertake such long-term prophylactic therapy. It still appears, however, that many physicians hold back from using anticoagulants on their patients. Perhaps, it is right that they should do so, if they lack the interest in this form of therapy, or if they lack adequate laboratory facilities. A dependable, experienced and accurate laboratory that is adequately equipped is an absolute essential for this form of therapy. Perhaps interest might be stimulated if more physicians were made aware of the possibilities and benefits resulting from such therapy. We have had referrals for long-term anticoagulant therapy from other physicians who knew of our special interest in such cases.

The first conditions treated with anticoagulants were phlebitis and pulmonary embolism. The mortality from pulmonary embolism occurring subsequent to an initial embolus can be reduced from 18 per cent to less than 1 per cent. Pulmonary embolism occurs as a complication in a variety of conditions, injuries and operations. It is, of course, a frequently fatal complication. Each year 34,000 people die of it in the United States. Many cases that were formerly labeled bronchopneumonia are now recognized as pulmonary embolism. Small emboli may go almost unheralded, showing just a little pleural pain, perhaps; there being no hemoptysis, shock, physical signs or x-ray evidence. Severe pulmonary embolism, on the other hand, will produce shock, tachycardia, dyspnea, cyanosis, and great pain, together with x-ray evidence and, perhaps, ECG signs, too. This latter variety is the most likely to produce fatal results. It is the early, small type which we are interested in recognizing and, thereby, instituting therapy to prevent the larger, classical type. If we, as clinicians, will maintain a high index of suspicion regarding the possibility of pulmonary embolism, then our preventive rate will continue to increase.

Myocardial infarction calls for anticoagulant therapy, which may be maintained for a shorter or longer period, ofttimes depending upon the individual case and the attending physician's judgment. Many coronary cases are now being maintained on long-term anticoagulant therapy, in an effort to forestall further attacks of coronary thrombosis or other thromboembolic development in these patients. Foley and Wright[2] report marked reduction in such occurrences in a group of patients observed with long-term therapy, as compared to such occurrences without anticoagulants. Assimilated experience certainly speaks in favor of long-term therapy after myocardial infarction. How long the therapy should be maintained is a matter of judgment, based on experience (and judgment is difficult). Quoting from an article by E. B. Bayes[1] in the January, 1957, *Medical Clinics of North America*:

> We cannot be guided by statistics in our decision about using anticoagulants in this way. We can only use our impression based on clinical judgment and experience. Many of us who use anticoagulants prophylactically would want them for ourselves even though there is a certain annoyance and nuisance in having prothrombin tests fairly frequently if one is to be reasonably safe while taking this medicine.

---

*Presented before the Section on Medicine at the eighty-ninth annual session of the Mississippi State Medical Association, May 14-16, 1957, Biloxi, Miss.

Friedberg[3], in his newest edition of *Diseases of the Heart,* has this to say regarding the use of anticoagulants:

> The over-all mortality rates in controlled studies . . . in acute myocardial infarction strongly suggest that anticoagulants should be employed routinely in this disease.

He goes further, stating:

> Omission of anticoagulants is justified only by a lack of laboratory facilities to perform accurate prothrombin determinations, or by the presence of firm contraindications.

For anticoagulant therapy, including long-term prophylactic therapy, there is a definite field of usefulness in cerebral vascular diseases. We have treated a number of cases of hemiplegia with anticoagulants, after thorough study of the case to rule out hemorrhage as the etiology. This, needless to say, is not an easy differentiation, but can be done with relatively high accuracy. Then if anticoagulants are used, it is with the acceptance of a calculated risk of making matters worse, should the case be one of a hidden hemorrhage. We discuss this risk with the patient's family before undertaking such therapy. Dr. Irving Wright[7], in a paper at the American College fo Physicians meeting in Chicago in 1954, made a statement that:

> It is difficult or impossible to obtain conclusive evidence which indicates that the use of anticoagulants has influenced the immediated course of a specific patient, after a cerebral-vascular accident has occurred . . . (but that) it is the impression of numerous observers that a favorable influence has been exerted.

Millikin and Siekert[5] emphasize the intermittent premonitory events that warn of possible impending thrombosis of the internal carotid artery. They note that attacks of unilateral impairment of motor or sensory function or both, occasional disorders of speech, and visual disturbance on the affected side are suggestive. They feel that the occurrence of such symptoms is an indication for anticoagulant therapy.

The first type of cases that were maintained on long-term therapy were cases of rheumatic heart disease with auricular fibrillation, having recurring emboli from atrial thrombi. Dr. Wright reported his first such case in 1947. In 1949, Dr. Lewis[4] placed one case, a doctor's widow who was a classical example with recurring splenic, small renal, and mesenteric emboli on long-term anticoagulant therapy. She lived until 1953. Another interesting such case was a sixty-year-old white female with rheumatic heart disease, auricular fibrillation who, in 1950, had a pulmonary infarction. Attempts were made to place her on dicumarol therapy at that time, but because of an apparent sensitivity, this was not successful. However, in 1951, she had a popliteal embolism in the left popliteal artery. This time the apparent idiosyncracy was not found and she was placed on dicumarol. She remained in good health until 1953, when she died from an appendiceal abscess. Incidentally, she was not seen in her final illness until after her appendix had ruptured.

There are, of course, many other thromboembolic phenomena encountered in a medical practice. We have had two cases of thromboembolism of the retinal vessels, which were treated with anticoagulants. Posey, Long and Stephenson[6], of this association, recently reported a case of acute thrombosis of the portal vein with a successful result, using heparin. We have, fortunately, not had such a case in our experience as yet. More and more reports are appearing in the literature concerning renal vein thrombosis. For that matter, many other various thromboembolic phenomena are being reported with ever increasing frequency.

It shall be mentioned, only in passing, that the proper use of anticoagulants is, of course, absolutely necessary. Give enough to do good, but not enough to do harm. This trite truism is quite applicable in the field of anticoagulant use. Most people will usually require 250-300 mgm. initial dose of dicumarol, then 150-200 mgm. the second day, and 50-100 mgm. thereafter. We have had some very odd dosage schedules on some of our patients; e.g., 50 mgm. for three days and 100 mgm. on the fourth day; or 50 mgm. six days per week; or 50 mgm. one day and 100 mgm. the next. We have tried to give that amount necessary to maintain the prothrombin time between 15 and 35 per cent, using a modified Quick determination. So far, in our experience of over 100 cases, in which anticoagulants have been used, we have had two instances of complications. One case had hematuria, and the other had hemarthrosis of the right knee. Incidentally, both of these cases were long-term cases; one a CVA, the other a coronary thrombosis. They both are currently well and are again receiving anticoagulants.

Anticoagulants are useful. They are at times life-saving. It is hoped that their proper use will become more widespread.

BIBLIOGRAPHY

1. Bayes, E. B., "Coronary Disease," Medical Clinics of North America, (January, 1957) pp. 22.

Anticoagulants—An Evaluation," Medical Clinics of North America, (September, 1956) pp. 344.
3. Friedberg, C. K., "Diseases of the Heart." Second Edition, Philadelphia: W. B. Saunders Company, 1956. pp. 572-579.
4. Lewis, J. F., "Pulmonary Embolism," The Journal of Arkansas Medical Society, 51, (October, 1954).
5. Millikan, C. H., and R. G. Siekert, Proc. Staff Meeting, Mayo Clinic. 30, 186-194, 1955.
6. Posey, E. L., J. W. Long, and S. L. Stephenson, "Acute Thrombosis of the Portal Vein," Southern Medical Journal, 50, (January, 1957) pp. 8-16.
7. Wright, I. S., and Ellen McDevitt, "Cerebral Vascular Diseases: Their Diagnosis and Present Treatment, Including the Selective Use of Anticoagulant Substances," Annals of Internal Medicine, 44:682 (October, 1954).

Cystic Dilatation of the Common Bile Duct: A Case Report

CARL P. BERNET, M. D.
Greenwood, Miss.

Cystic dilatation of the common bile duct is an unusual condition characterized by the enlargement of the common duct without demonstrable mechanical obstruction. Once the cyst appears its weight causes it to "hang", it becomes obstructed, and thus it enlarges. The cyst may involve only the common duct, or it may involve the junction of the common, hepatic, and cystic ducts. Thus either one, or three ducts may enter the cyst. The gallbladder is of normal size, and the cyst always connects with the duodenum by means of the common duct. The cyst itself may vary in size from that of a golf ball up to a two-liter capacity. Its wall is thick, and infection is common. The liver is frequently enlarged and cirrhotic. The intra-hepatic ducts are occasionally dilated, and microscopically there is increased periportal connective tissue, and proliferation of the biliary capillaries.

CASE

K. W., a 5-year-old white girl, was visiting in Mississippi for the Christmas holidays. She was first seen on New Year's Day with a complaint of cramping abdominal pain of 24 hours' duration associated with fever. She had been nauseated for the previous four days but the mother had paid little attention to this because she had often complained of stomachache and nausea in the past three years. None of the previous episodes had been associated with fever, but when it appeared on this occasion the mother sought medical attention.

The past history, dietary history, and family history were irrelevant.

When first seen the patient was a well-developed, somewhat thin girl, who appeared slightly jaundiced. Her temperature was 101, and her pulse 100. Except for the liver which extended 2" beneath the costal margin, and was tender, the physical exam was normal. Her urine was brownish and her stools clay-colored. A diagnosis of hepatitis was entertained, and she was advised as to a diet and rest.

The next day the mother reported that she became more jaundiced and vomited occasionally. Following this she rapidly improved, and when next seen a week later the jaundice had cleared, her urine and stools were normal, and the liver although still down 2" was no longer tender.

Two weeks after she was first seen she was allowed up, and walked around in the yard. The following morning she awoke with an acute cramping pain in her right upper quadrant, that she described as being different from her original pain, and caused her to double up. She was again nauseated, and her temperature had risen to 101°. Positive findings were limited to her abdomen. Her liver was still down 2", was again tender, but beneath it, and difficult to distinguish from it, was a mass the size of a golf ball. This mass was firm, very tender, and its exact borders hard to tell. An x-ray of her abdomen was compatible with a RUQ mass, and her WBC was 27,000 with an increase in polys. She was hospitalized, and treated with penicillin, streptomycin, IV fluids, and rest. That night her temperature rose to 102°, she began to itch and the next day she was again icteric. A gallbladder series revealed a non-functioning gallbladder. Her sedimentation rate was markedly elevated, but her alkaline phosphatase, and thymol turbidity levels were normal.

In the hospital her jaundice rapidly cleared, her temperature fell to normal, as did her WBC. Her appetite returned and in three days she was feeling good. The mass was no longer present and her liver was only slightly tender.

The sixth hospital day the penicillin and streptomycin were discontinued. Shortly thereafter, she again began to feel bad, her WBC rose, her abdomen became tender, and the mass reappeared. In view of the recurrent jaundice, pain, and presence of an abdominal mass, in addition to the normal liver function tests, and non-functioning gallbladder series, a preoperative diagnosis of a choledochal cyst was made. At surgery the diagnosis was confirmed. Her immediate postoperative course was smooth, and she returned to New York a month later symptom-free and gaining weight. I will ask Dr. Lucas who did the surgery to comment on the surgical aspects of this condition as well as this case.

Cases of cystic dilatation of the common duct are rare. Only 128 cases have been reported in the literature. Eighty per cent of these have been females, the majority being beneath twenty years of age. Tumor, jaundice, and pain have been present in most cases, only a few have had acholic stools. Correct preoperative diagnosis has been unusual, and in a few the correct diagnosis was not made even at surgical exploration.

Of the 104 cases reviewed by Hutchins 66 died, and 38 recovered. Thirty-two of the 44 cases treated by anastomosis of the cyst to the intestine recovered, and this is considered to be the procedure of choice. Excision of the cyst is associated with a uniformly high mortality, and thus to be avoided. Postoperative cholelithiasis has been reported.

The characteristic findings are

1. Pain. The pain is usually dragging in nature. It is located in the epigastrium or right upper quadrant, usually not severe and accompanied by nausea but seldom vomiting. Chronicity and intermittency are the usual course.

2. Mass. The mass is palpable in ninety per cent of the cases. It may be cystic but varies a great deal in size and location. Tenderness is the rule.

3. Jaundice, Jaundice is present in ninety per cent of the cases. In addition the liver is usually enlarged but acholic stools have only been reported in one case out of ten.

4. Fever. Fever, elevated WBC, are often present with secondary infection.

The etiology of this condition has been determined but a number of interesting theories have been suggested. Among them are

1) an anomalous direction of the common bile duct which results in a kink and subsequent dilatation.

2) a congenital stenosis of the lower part of the duct with a resultant increased back pressure.

3) a developmental anomaly similar to that of a congenital hydroureter.

4) a failure of the sphincter of Oddi to relax at the correct time.

In summary, a case of cystic dilatation of the common bile duct preoperatively diagnosed and corrected by surgical anastomosis of the cyst to the intestine has been presented. The symptoms and etiology of this condition have been reviewed. A diagnosis of cystic dilatation of the common bile duct should be suspected whenever a patient presents herself—particularly a young female—with a history of chronic abdominal pain associated with jaundice and a tumor mass in the right upper quadrant.

Read before the 65th Semi-Annual meeting of the Delta Medical Society—April 11, 1956, Greenwood, Mississippi.

EVERY WOMAN
WHO SUFFERS
IN THE
MENOPAUSE
DESERVES
"PREMARIN"®

widely used
natural, oral
estrogen

AYERST LABORATORIES
New York, N. Y. • Montreal, Canada
5646

Recognition and Management of Deafness in Children*

RALPH SNEED, M. D.†
Jackson, Miss.

Let me say at the outset that I have nothing new or amazing to offer on the subject under consideration, but rather will endeavor to review briefly some of the major points of such a vast subject.

In this discussion we shall consider deafness as any impairment of hearing to the point that the residual hearing is of no practical value in communicating with others. Therefore, it will include the hard of hearing, or partially deaf, as well as the totally deaf.

The number of deaf and partially deaf in the United States has been variously estimated. The U. S. Public Health Service estimates that about 15,000,000 of all ages in this country are thought to have some degree of hearing loss, and that of this number about 3,000,000 are school children of all ages. In our own state of Mississippi a hearing testing program carried out by the school service showed that seven to eight percent of the children tested needed to be referred to private physicians for further testing and/or treatment. Of 33,433 children tested in this program, 2,882 were thus referred. It, therefore, becomes obvious that the problem is no small one.

The etiological factors involved in hearing loss in children are quite varied. In a group studied in the Chicago area, including 3,120 children, the deafness was congenital in 61.8 per cent and acquired in 38.2 per cent. Of those in whom deafness was acquired, 59.2 per cent occurred in children under three years of age. An additional 28.2 per cent were from 3 to 10 years of age. Causes of congenital hearing loss are usually spoken of as hereditary or toxic—meaning some toxic condition with the mother which reacts upon the embryo or fetus by inhibiting the development of the end organ of hearing, such as measles, virus diseases, etc. Causes of acquired type of hearing loss are much more diversified; some of the more common ones might be listed as follows: 1) meningitis, 2) encephalitis, 3) brain tumor, 4) concussion, either central or auditory, 5) fracture of temporal bone, 6) scarlet fever, 7) measles, 8) mumps, 9) whooping cough, 10) influenza, 11) pneumonia, 12) typhoid fever, 13) diphtheria, 14) syphilis, 15) common cold, 16) any disease causing a high fever, 17) external otitis, 18) impacted cerumen, 19) foreign body impactiin, 20) otitis media acute or chronic, suppurative or serous, 21) mastoiditis, acute or chronic, 22) excessive growth of lymphoid tissue in nasopharynx, 23) toxic agents such as quinine, aspirin and streptomycin and one final large group which we shall only mention—the various psychogenic types.

DIAGNOSIS

In this problem the mere establishing of a diagnosis is not sufficient. The presence and degree of residual hearing must also be established. With the more recent advances in teaching methods and the availability of modern and powerful hearing aids, it had become obvious that the earlier a diagnosis of hearing loss of deafness can be made and proper training and treatment instituted the more likely that individual is to be able to lead a normal life. Many pre-school hearing clinics today are anxious to begin the training of a deaf child as soon after its eighteenth month of life as possible. And, as a result of the widespread publicity of the availability of such training programs, more and more children are appearing in the otologist s offices at younger and younger ages. Therefore, our problem would seem to become more and more difficult. Devices for the purpose of measuring residual hearing in this group are continually being developed, but so far all of them require long and tedious training of the child before accurate results can be obtained. Most of you are familiar with these devices—such as the type in which after a certain sound is produced, a corresponding button can be pushed and a doll or a clown or an animal will pop out of a box. One of the most recent developments in this field is the "psychometer made by the Maico Company which uses a "pure tone" sound followed immediately by a mild shock impulse. This shock impulse produces a change in skin resistance which can be measured electrically. After the child has had a training period the changes in skin resistance occur upon hearing the sound without the accompanying shock. These changes in skin resistance are measured and charted and show the decibel level at which the child begins to hear.

---

*Presented before the Section on Eye, Ear, Nose, and Throat, at the eighty-ninth annual session of the Mississippi State Medical Association, Biloxi, Mississippi, May 14-16, 1957.

†From the Division of Otolaryngology, Department of Surgery, School of Medicine, Universiyt of Mississippi.

"Free field" testing is still probably the most accurate or at least the most widely accepted method in general use today—particularly at hearing centers. The main objection to this type of testing, as far as the otologists are concerned, is the elaborateness of equipment and the time-consuming element. It is certainly a great advantage to have such facilities close at hand for referral purposes, for it is nearly always necessary to call upon the speech and hearing centers in the community—even in spite of repeated office examinations—to determine the presence or absence and the amount of residual hearing.

It can readily be seen that all of these devices require much time and training and are not practical for use in the office of the average otologist, but they are extremely valuable in the hands of the trained personnel in pre-school hearing and speech centers.

Thus the problem of diagnosis in the very young returns to tax the ingenuity of the otologist. Usually the mother is the first to suspect that something is wrong. The child is one and one-half or two years old and has as yet made no effort to talk. If it is a first child, the grandparents may be the first to recognize that speech development is delayed. At any rate, the usual chief complaint is that the child does not talk. The parents may or may not be suspicious of the presence of deafness. It is at this point that we must begin a careful history. Questions such as the following must always be asked:

1. How old is the child?
2. Is there any history of deafness in parents or grandparents?
3. Was delivery normal or instrumental?
4. Was child full-term or premature?
5. Was child yellow or jaundiced for a period after birth?
6. Were Rh factors compatible?
7. Did mother have any illness during pregnancy—particularly German measles?
8. Have parents any reason to believe that child could ever hear? (It should be kept in mind here that many parents will insist that their child can hear because he or she always turns the radio on extremely loud—or because he will look up when a plane passes near. These signs do not necessarily mean that the child is hearing; but, instead he may be reacting to vibratory stimulation.)
9. Does the child make any vocal sounds—if so, can they by any stretch of the imagination be considered to be words?
10. Has the child had any serious illnesses; particularly any with prolonged high fever?
11. Have there been periods of prolonged medication?
12. Has he had ear infections or chronic draining ears?
13. Has he had attacks of tonsillitis or throat infections?
14. Is he a mouth breather?
15. Has he ever had sinus infections or shown evidence of allergy?

After these and other pertinent questions have been answered, the otologist is ready for his examination. It is always helpful if the examiner, while going through the history, has been using a few maneuvers designed to gain the confidence of the child and to show that he will not hurt him.

During the examination, the child's gait, alertness and behavior should be noted—abnormality of gait, for example, might indicate a brain injury. Other congenital abnormalities, such as crossed eyes, cleft palate or harelip, should be noted. The condition of the nasal membranes and the presence or absence of nasal obstruction must be noted. The mouth, teeth, hard palate, the tongue and tonsils must be observed. It is important to examine the nasopharynx and eustachian tube orifices. The external ears, the canals and the drums must be closely inspected. Frequently x-rays of the sinuses, mastoid areas and skull, as well as special views to show the presence or absence of the semi-circular canals or ossicles may be helpful. Time does not permit the discussion of all the various abnormalities which might be encountered on physical examination—correction of which would improve the hearing—but most of us are familiar with these conditions and their management.

After the routine examination has been completed, it is nearly always necessary to use other methods to try to determine the presence or absence of deafness. It is often impossible to get enough cooperation from the patient at one office visit even to hazard a guess as to whether or not hearing loss exists. Caloric tests, if the child is old enough to tolerate them, will give us information concerning the presence or absence of semi-circular canals. Turning tests can be used for the same purpose, and if the very young child is to have a general anesthetic for any purpose, the caloric test can be carried out while the patient is under the influence of ether. These children must be seen on numerous occasions. It is helpful at times to have some tests made at home. These tests are of necessity crude, since they must be carried out by the parents. I usually advise the parents to test the hearing when the child is asleep. This is by no means an accurate test, but will frequently give much needed additional information. In carrying out this test the parents must be cautioned to be sure that the child is asleep and to make noises that will serve only as sound stimulants and to avoid any noises that might also be vibratory stimulants. Another such test is to place the child in such a position that vibrations will not be a factor and that his back will be to the source of the sound; then, have one parent attract his attention while the other increases the volume on the radio until the child's attention either is or is not attracted by the radio. I am sure that all of you have other and better tests of the same type which you use frequently in your own practice. I have in my office a sound amplifier connected to a headphone which I use for two purposes. In the first place, I find it very helpful in talking to elderly hard of hearing patients in the office, and I also lend it to parents who have a child that may or may not be deaf. I like for them to keep it a month or longer and study the reaction of the child with and without the aid on.

Treatment

In discussing treatment it is necessary to deal with each major type separately. We all know that in a conductive loss every effort must be made to restore the hearing to normal, or at least to a serviceable level. This will include such things as meticulous removal of the adenoids; discriminate use of x-ray or radium; clearing up sinus infections; control of nasal allergies; elimination of middle-ear infection; and correction of congenital deformities that might be contributing to the condition. Along this line I would like to say here that in those cases where there is a congenital absence of the ears, I favor full investigation to determine whether or not the individual is a candidate for a Patee operation, rather than routinely relegating all of them to the plastic surgeon. It is relatively simple to take x-rays by the technique of Dr. George Owens of Los Angeles to determine the presence or absence of ossicles. The presence of ossicles is an indication that the Patee operation will be successful. The surgical procedure is only slightly more difficult than a mastoid operation and although it does not restore hearing to normal it does bring the hearing level to such a point that a hearing-aid will enable the patient to communicate satisfactorily with his fellow-man. The application of a plastic ear completes the procedure and you have not only given the patient a pleasing appearance but have also given him functional hearing.

I shall make no effort to go further into detail concerning the treatment of this group, but I would like to make a few brief remarks about the management of the child with perceptive deafness. It has been not many years since all of these children were considered hopeless; if they were fortunate they would be sent to a school for the deaf where they were taught little more than to read and write and to communicate with each other by a sign language. Through the foresight and persistent efforts of many individuals this condition has now completely changed. It is now universally recognized that early training of these children is essential. Through modern teaching methods and equipment the vast majority of these handicapped children can be taught to speech-read and use hearing aids to a degree that their hearing loss serves as practically no handicap. There are pre-school speech and hearing centers scattered throughout the country. We have recently had the privilege of watching and helping the establishment of such a center in our home town. This project started out as a joint effort of the Junior Chamber of Commerce and the Society of Crippled Children and Adults, however, as the project continued and the cost increased, these two organizations felt that they could do little further other than to contribute certain amounts of money to this project. Fortunately, one of the parents of one of our pre-school deaf children took her child to the Central Institute of Hearing in St. Louis and, while she kept the child there two years, she took teacher's training at this school. Since her return she has taken over the project and operates the school as a private endeavor and, I must say, is meeting with a considerable amount of success.

Other such schools are being established and the older schools are continuing to expand but even so reports indicate that many of these schools are over-crowded and have to place children on the waiting list. Let us hope that, with continued expansion, this situation can soon be overcome and that facilities will be available for all of those who need them.

As to the management of these children, I am convinced that it is advantageous to try to get a hearing-aid on them by the time they are eighteen months old if it is at all possible. There are many men who believe that a hearing-aid should be put on at six months of age if the diagnosis can be established. I have seen one child who had an aid put on at the age of nine months and it worked very satisfactorily. In fact, the child would awaken each morning and begin to cry until his hearing-aid had been adjusted. Usually at the first visit I advise the parents to take the correspondence course from the John Tracy Memorial Clinic in Los Angeles. This will give them a better understanding of the problem they are faced with and will better equip them to care for the child both before and after he has been enrolled in the pre-school hearing center which will usually be at or about the age of two or two and one-half years. I think it is of the utmost importance that the parents be reassured concerning the physical and mental development of their child. This will not only reduce the tremendous psychological shock but will put them in a better frame of mind for the proper training and care of their child. The parents should understand that the personality defects which a deaf child may exhibit are not implicit in his handicap but developed because of limitations of social contacts and improper attitudes of parents.

The ramifications of the psychological aspects of this problem are so wide and varied that to attempt to cover them at this time would be utterly impossible. Suffice it to say that it behooves every otologist to acquaint himself sufficiently well with the over-all picture that he can intelligently guide the parents into the proper channels for the best care of their child.

DISCUSSION

Dr. Emmett Herring (Vicksburg)— I find it hard to discuss Dr. Sneed's paper. It is very complete and the more I read it the more I wondered what I would say. He has given us an excellent study of the testing methods for these handicapped children, and many avenues of investigation to find the etiology. He has called attention to some of the rarer causes, and the otologist's responsibility in diagnosis and prescribing of these conditions.

I would like to emphasize or redirect our attention to two common causes of deafness that are always with us and present problems to each of us doing otology. They are the chronic draining ear, and catarrhal otitis media. Much has been done to prevent the first of these through better medication and proper surgical management of acute otitis media, as well as education of both those in general practice and the public. Yet it continues to be a problem and each year we see new cases developing chronic draining ears with perforated drums and defective hearing.

It seems to me we are seeing more catarrhal otitis media recently and it is something we need always to keep in mind because it is common, it has often escaped recognition by the family doctor and it does cause considerable hearing loss. If we see an ear that looks suspiciously like it has fluid behind it, we must assume it does until proved otherwise.

It is unfortunate that doctors often have to hurt people. Especially since these children do not hear well, they can not understand what we are doing nor why, and previous experience with doctors has already bred distrust. Therefore, it takes time, and often a number of visits before we can properly evaluate each child and its hearing problem. That is one reason speech and hearing centers have been such a help to us for children are not hurt there and in their minds are not related to doctors. We are fortunate in having one of these in Hattiesburg to help with these problems. I'm sure that another advantage of these centers is that most of the workers there are women and they seem to gain the child's confidence better than men. Certainly we should take advantage of these centers. Yet, we must also check their findings against the child's ear condition and our own clinical impression.

I go on not knowing,
I would not know if I might,
I had rather walk with Him in the dark;
Than to walk alone in the light.

Some Clinical Experiences with Parenteral Iron in the Treatment of Iron Deficiency Anemia in Infants and Children

ROBERT FORD, M. D.
Gamble Brothers and Archer Clinic
Greenville, Miss.

IRON METABOLISM in infants and children has attracted a great deal of research and clinical investigation during the past five years. Changing concepts in the dynamics of iron and iron metabolism have been responsible for some new approaches to the clinical management of iron deficiency in infants and children. The growing child presents a unique opportunity for the development of iron deficiency. The rapid growth of the child's tissues and blood volume and the increase in the amount of circulation hemoglobin depletes the child's iron reserves unless a very liberal intake of iron passes the intestinal barrier. Recent studies have accumulated much evidence that iron in food is poorly assorbed and available in small quantities and that scarcely enough is provided to meet the demands for hemoglobin formation, let alone to prooduce enough foor iron storage. This situation in growing children is the basis for the much-quoted aphorish that the infant bleeds into his own tissues. Since the infant's diet is necessarily low in iron, an infant must have a very liberal intake from other sources or else he must draw from his storage iron in order to continue his growth.

Much light has been shed on this very important subject by Sturgeon[1]. In a recent review article he has vividly shown us one mechanism of iron deficiency in infancy. Using hematological data on newborn infants, he proposed three hypothetical babies representing maximal, normal, and minimal iron content at birth. Because these hypothetical babies may very well be the key to our present concept of therapy, I shall review his work briefly. Table I shows Baby A with maximal iron content. Table II shows Baby B with normal iron

TABLE I

HYPOTHETICAL IRON DISTRIBUTION AND REQUIREMENTS DURING FIRST YEAR OF LIFE†

	BABY A			BABY B			BABY C		
	I	II	III	I	II	III	I	II	III
	Birth	Age 1	Age 1	Birth	Age 1	Age 1	Birth	Age 1	Age 1
Wt in kg	4.0	10.0	10.5	3.5	10.0	10.0	3.0	9.5	9.5
Blood vol. ml/kg	90	75	75	84	80	80	80	85	85
Hb gm/100 ml.	19.0	8.9	13.0	16.0	5.3	13.0	13.0	2.6	13.0
Total Hb Iron in mg.	232	238	343	159	143	353	106	71	357
Myoglobin and other Parenchymal Iron in mg.	16	62	62	14	60	60	12	58	58
Liver, spleen Iron mg.	51	0	0	30	0	0	11	0	0
Total Iron in body, mg.	300	300	405	203	203	413	129	129	415
Deficit Iron in mg. at end of one year			105			210			286
Daily Iron requirement to meet needs mg.			0.29			0.58			0.79
Daily Iron ingested to meet needs (assuming 10% absorption) mg.			2.9			5.8			7.9

†Adapted from Phillip Sturgeon's paper, "Iron Metabolism."[1]

---

*Presented before the Section on Pediatrics at the Mississippi State Medical Association, May 14, 1957, Biloxi, Miss.

TABLE II

DICKSTEIN'S FORMULA FOR CALCULATING IRON DEFICIT[7]

$$\text{Mg. Iron Deficit equals } \frac{\text{B.W.} \times 44 \ \ 12.5 \times 0.003 \times 1000}{100} - \frac{\text{B.W.} \times 44 \times \text{Hg.} \times 0.003 \times 1000}{100}.$$

B.W. equals body weight in pounds.
Hg. equals patients hemoglobin in grams per 100 ml.
This formula can be algebraically simplified to read
Mg. Iron Deficit = body weight in pounds x (16.5 — 1.3 x present hemoglobin level in grams per 100 mg.)

The dose thus calculated was then arbitrarily doubled, in order to correct for hte depleted body stores of iron.

content and Table III shows Baby C with minimal iron content at birth.

Assuming that each infant gained weight normally, Sturgeon has arrived at the approximate figures for concentration of iron in the various body compartments. It has been common in the past to assume that the major requirements for iron in the first year is to permit increases in hemoglobin to parallel growth. The growth increase also produces an increase in total muscle mass and a consequent increase in myoglobin. Although myoglobin iron requirements are small, they cannot be ignored since they are met at the expense of hemoglobin iron. For comparisons of the iron distribution at birth of babies A and C with those which may be found at the end of the first year, column I shows the iron partitions at birth. Column 2 shows the iron partition if no additional iron were injected. Column 3 shows the amount of iron needed to maintain the baby one year of age with 13 grams hemoglobin. Baby A, at the end of one year, theoretically had sufficient storage iron from birth to meet his tissue iron requirements but insufficient to permit increases in total hemoglobin to parallel the increase in blood volume. This is reflected in the theoretical hemoglobin of 8.9 which is in keeping with the "physiologic" anemia of infancy. Not only do babies B and C have insufficient iron storage to permit maintenance of hemoglobin but they are forced to call upon hemoglobin iron to provide tissue iron. It can also be seen that baby C is "on the brink of death" from anemia at one year of age. Baby A requires only 100 milligrams of iron from exogenous sources, B twice as much, and C nearly three times as much to reach one year of age with 13 grams of hemoglobin.

In brief, these three tables adapted from Sturgeon's work show one of the mechanisms of iron deficiency in the first year of life. Regardless of the hypothetical nature of these values cited, some such explanation helps the practicing pediatrician to rationalize why his "well babies" develop anemia in spite of optimal medical care. In any infant whose iron stores are depleted at birth—such as in placental insufficiency, accidents of parturition and others, the amount of iron from exogenous sources needed cannot possibly be achieved under any but the most optimal conditions of health. Infections, bleeding and many chronic bone marrow depressive diseases enter into the pathogenesis of anemia during the period of infancy. Recognition of these iron-deficient babies requires routine well baby care and frequent use of the laboratory in the routine observation of the baby's hemoglobin during the first year of life.

Simple iron deficiency can almost always be treated effectively by the oral administration of iron. A considerable number of infants fail to respond to oral iron administration for various reasons. Perhaps the first reason for failure to respond to oral iron is that iron on the medicine shelf does not produce an increase in the baby's hemoglobin. We have found that oral iron is ineffective in the presence of any inflammatory process, either acute or chronic, and that its predicted response as a therapeutic tool is definitely slower than one would desire. It is particularly slow in preparation for elective surgery and other urgent reasons to increase the blood count to optimal levels. We have also found oral iron ineffectual by both trial and error methods and also in certain chronic disorders, such as celiac disease, fibrocystic disease, conditions in which the sedimentation rate is elevated, such as rheumatic fever, glomerulonephritis, chronic tonsillitis and other conditions. The presentation of this paper is not by any means intended to offer the practitioner a substitute for the therapeutic armamentarium in anemia which has been proved of value in the past. Oral iron has been and always will be useful in treatment of anemia. Parenteral iron, as will be shown later in the paper, has certain advantages in ease of administration in certainty of results and in speed of response.

Blood transfusions as a means of treatment of iron deficiency anemia are a poor substitute for the use of iron itself, either orally or parenterally. We must remember that every pint of blood contains from 200 to 250 milligrams[2] of iron and that this same amount of iron can much more readily be administered in a smaller dosage, a smaller volume either parenterally or orally, with equal effectiveness. This is particularly salient in our patients with small blood volume. The limitations and hazards of blood transfusions in children have been emphasized time and time again, particularly in a recent article by Doctor H. Smith[3] where it is pointed out that blood transfusions not only subject the child to certain hazards but also have a depressant effect upon the bone marrow. Another author has written a classic article on "One Pint of Blood"[4] in which he cites the frequent abuse of blood transfusions and the dangers as being from 1-1000 to 1-3000 of fatal results from blood transfusions. As our knowledge enlarges, it is certain that the use of blood transfusions themselves in the treatment of severe nutritional iron deficiency anemia becomes more hazardous and less likely to be the treatment of choice.

For many years, the British have been interested in developing a safe non-toxic iron product that could be given parenterally. In 1947, the interest in parenteral iron was greatly advanced by the development of saccharated iron oxide and a number of successful reports of its use appeared in the ensuing ten years. In 1952 Dickstein[5]—Wollman, et al, reported a series of infants and children treated with intravenous iron from the Children's Hospital in Philadelphia. In this series a gratifying response to intravenous iron was noted in iron deficiency anemia in children.

Following along the lines of the work of Dickstein and his associates on intravenous iron, we have conducted a study using both intravenous iron and later in our study using intramuscular iron in the treatment of anemia in children. The first phase of our study comprises a group of children treated with intravenous iron covering a period of one year beginning in the spring of 1955 until the fall of 1956. In the fall of 1956, as a result of our interest and gratifying results with intravenous iron, intramuscular iron was made available to us by the Lakeside Laboratories[6] in the form of Imferon. Since October of 1956, intramuscular iron has been used in a similar manner in which intravenous iron had been used and a similar series of children have been treated with Imferon with equally gratifying results. The frequency of iron deficiency anemia encountered in the author's practice is approximately one case for every five hospitalized patients in a General Hospital which includes both white and colored patients. In the office practice, a similar high incidence of iron deficiency occurs, although the figures are not exactly known on the incidence. In this author's private practice, blood counts are done frequently and routinely during well baby care and following most infectious diseases. Diagnosis of anemia is established only through the laboratory methods. Reticulocyte counts and bone marrow examinations have been done in selected cases. Records were kept on some 300 cases which have been studied in this manner. Diagnosis by hemogram alone has been the rule. Most of these children have had previous therapy for anemia without improvement. Criterion for starting treatment was based on both clinical and laboratory findings, poor response to previous therapy, repeated infections, also gastro-intestinal disturbances or various types have entered into the decision to give parenteral iron. In the most part, the iron deficit has been calculated by Dickstein's formula which is Table IV and this dosage of iron has been administered to infants and children either by intravenous or intramuscular route. We have tended to exceed this dosage with a top maximum dose of 300 milligrams in infants under one year of age. We would be quite interested to know if a different formula might be applicable to infants in this category and most workers with Imferon apparently have used arbitrative dosages in this young age group. From the 300 odd cases studied, follow-ups have been incomplete in a number of cases. In a busy office practice, it is many times difficult to check on the various reasons for failure of follow-up. We are hopeful that some instances of failure of follow-up have been due to the child's improved clinical condition.

At this time we are able to demonstrate two major groups in the study. Figure 1 shows a

FIG. I - *DISTRIBUTION OF HEMOGLOBIN LEVELS OF 58 CHILDREN WITH IRON DEFICIENCY ANEMIA BEFORE AND AFTER INTRAVENOUS IRON THERAPY*

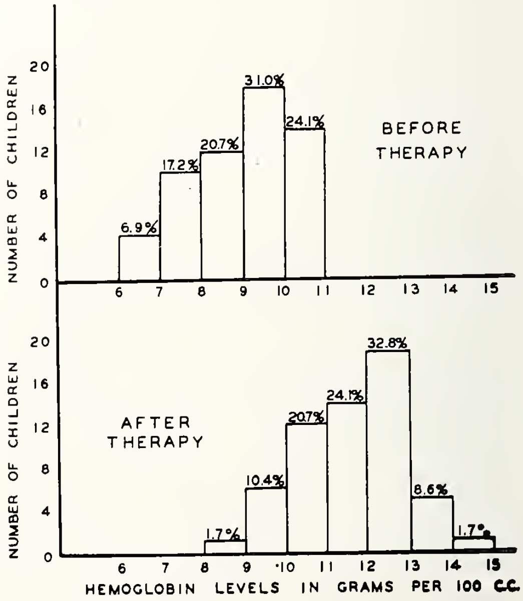
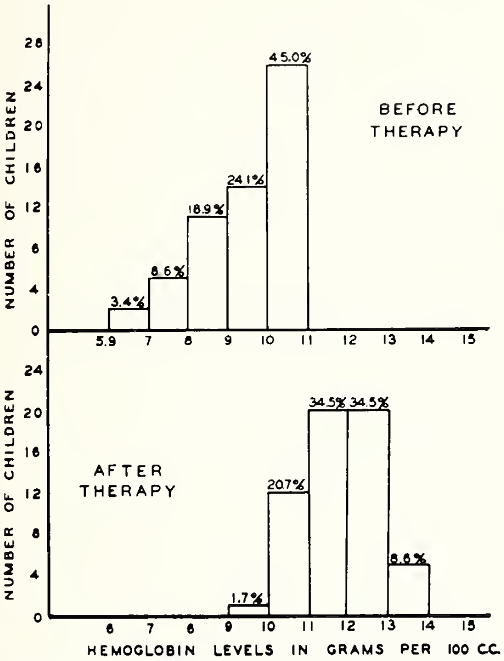
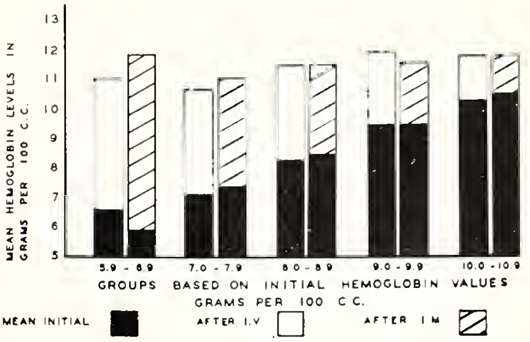


FIG. 2 - DISTRIBUTION OF HEMOGLOBIN LEVELS OF 58 CHILDREN WITH IRON DEFICIENCY ANEMIA BEFORE AND AFTER INTRAMUSCULAR IRON THERAPY



distribution of hemoglobin levels of fifty-eight children treated for iron deficiency anemia before and after therapy with intravenous iron. All this series of fifty-eight children were initially 11 grams of hemoglobin under. The majority of the group has been between 9 and 10 grams hemoglobin. After therapy 32.8 per cent have increased their hemoglobin to 12 or 13 grams. A comparable series of infants treated with intramuscular iron, fifty-eight children, is shown on Figure II. All these children were 11 grams or under with a large proportion of them between 9 and 10 grams hemoglobin. An entirely comparable response with all of the children reaching levels above 9, majority being within the 11 to 13 grams hemoglobin range after dosages of intramuscular iron. Figure III shows a comparison of the initial hemoglobin levels of fifty-eight children treated with intravenous iron and fifty-eight treated with intramuscular iron. As you can see from this figure, the mean hemoglobin level in the two injectable materials is entirely comparable. Clinical responses in individual cases are shown in the following case reports.

FIG. 3 - COMPARISON OF MEAN INITIAL HEMOGLOBIN LEVELS OF 58 CHILDREN TREATED WITH INTRAVENOUS IRON AND 58 CHILDREN TREATED WITH INTRAMUSCULAR IRON WITH THE MEAN HEMOGLOBIN LEVELS AFTER THERAPY



CASE ONE—J. C., a five-and-a-half-year-old white boy, was admitted to the King's Daughters Hospital with "swollen legs, face and blood in urine." On examination this child was found to have hypertension of 170/140. He appeared acutely ill with marked facial edema, pitting edema of both lower extremities, pallor and ascites. Admission hemogram revealed 4.08 R.B.C., 9.5 grams hemoglobin, differential smears appeared normal. Because of persistent severe hypertension, oliguria and congestive heart failure, it was never advisable to give this child whole blood transfusions during the acute phase of his disease. After five days in the hospital his hemogram was as follows: R.B.C. 4.6 M., hemoglobin 8.1 grams. At this point he was started on Imferon, the dosage being calculated on the basis of Dickstein's formula was 600 milligrams deficit. He was given Imferon 600 milligrams in daily doses of 100 mgm. The injections were started during the acute phase of the disease. At the same time he was still receiving digitalis and was still hypertensive and receiving intramuscular injections of magnesium sulfate. Not only was there no reaction to the intramuscular injections, but this child referred to these injections as his "good shots" since they were much less painful to take than the 50 per cent magnesium sulfate. He had an immediate improvement in appetite, aven though the initial two days of therapy saw the hemoglobin fall even further to 7.5 grams. One week after completion of the injections his hemoglobin had risen to 10.1 grams. The reticulocytes were 2.2 per cent at the end of the course of injections. After the acute symptoms had subsided, he was sent home for two weeks but returned because of acute infections of the tonsils, adenoids and paranasal sinuses. Upon readmission to the hospital, now about three weeks post Imferon therapy, he had a hemoglobin of 10.8 grams. Eight days later, while on intensive antibiotic therapy, his hemoglobin rose to 12.2 grams. The child's appetite remained good and his nephritis stabilized. One month after the course of Imferon therapy, this child had a tonsillectomy, adenoidectomy, and removal of four chronically infected carious deciduous teeth. On last follow-up examination, this child had a normal blood pressure, urine and his hemoglobin remained at 12.0 grams. At this time the child appeared alert, active and healthy. The site of his surgery was well healed.

CASE TWO—C. C., an eleven-month-old white female infant, was admitted to the General Hospital with the complaint of diarrhea and failure to gain weight since birth. She had had repeated attacks of respiratory difficulty and loose stools. She was born at thirty-eight weeks' gestation but weighed only four pounds at birth. She had one episode of heat prostration in the summer of 1956. On admission she appeared chronically ill and malnourished. At eleven months she weighed eleven pounds, six ounces, and was 26½ inches tall. She had a large abdomen and appeared pale, especially the ear lobes and mucous membranes showed a waxy pallor. Admission impression was that of either celiac disease or fibrocystic disease with a severe nutritional anemia. The clinical impression of fibrocystic disease was supported by the findings of a sweat sodium of 70 M-eq-liter. Admission hemogram revealed a 3.42 M. R.B.C. with 6.0 grams hemoglobin. She was started on a "Celiac Diet," pancreatin, antibiotic therapy and good nursing care. On the second hospital day, she was started on Imferon therapy and was given a total of 400 milligrams in small doses over a period of nine days. At the completion of therapy, her hemogram was 3.9 M. R.B.C. with 7.9 grams hemoglobin. Two weeks after completion of therapy her count was 3.6 M. R.B.C. with 9.9 grams hemoglobin. She was discharged from the hospital and followed in the office. One month after the beginning of Imferon therapy her hemoglobin had risen to 10.5 grams. This child had gained weight up to sixteen pounds. She now has an excellent appetite and color. She does not appear anemic clinically. Even before the completion of her series of injections, she had a remarkable improvement in disposition, improved color and appetite.

CASE THREE—P. K. E., who was discovered to have anemia incidental to a routine check-up following a respiratory infection at sixteen months of age. This child was born in the King's Daughters Hospital on July 11, 1955, the product of a full term pregnancy and normal delivery. She had apparently done very well and received what appeared to be an adequate diet. She had had only three respiratory infections during her first year. At sixteen months of age, a hemogram was performed because she looked pale and the mother described her as being irritable and not sleeping well. The pre-therapy count was 5.01 M. R.B.C. with 8.4 hemoglobin. She was started on Imferon and over a period of eight days received 300 mgm. in divided doses. Seven days after completion of therapy with Imferon her count had increased to 10.3 grams hemoglobin with a 4 per cent reticulocyte count. One month after therapy her count was 5.4 M. R.B.C. with 12.3 grams hemoglobin. This child showed an immediate response with improved appetite, improved color and decreased irritability. She has completed this winter without any respiratory infections.

CASE FOUR—H. L. M. was referred to my office by the urologist, who advised that this fifteen-month-old Negro male needed a circumcision. Preoperative hemogram revealed a hemoglobin of 6.4 grams hemoglobin. Physical examination revealed a normal fifteen-month-old "bottle fed" colored male infant with evidence of anemia. He was given 300 milligrams of Proferrin (saccharated iron oxide) intravenously over a period of one week in divided doses. Seven days after the completion of therapy, his hemoglobin had risen to 9.6 grams. At this time he had an excellent color and appetite and the elective circumcision was performed. His subsequent course was uneventful and he tolerated the surgery well. Two months later on a routine check his R.B.C. was 4.62 M. and his hemoglobin 12.0 grams. His general condition is good and his appetite and weight gain good.

The results of our study on parenteral iron have shown that iron can be safely administered parenterally. There have been no reactions to the intramuscular iron and the reactions encountered in intravenous iron were thought to be to the rapidity of injection rather than to the material itself. We have seen no reactions, either local or systemic, in the use of Imferon. After administration of parenteral iron, the hemoglobin level rises 1 to 1½ grams per week to an optimal normal level. The clinical improvement in the child is detectable within twenty-four hours after administration of iron. We have observed immediate improvement in color, increasing appetite and improvement in the irritability so often seen in these children. Reticulocyte responses, as we have observed them, have been very high, from 5 to 23 per cent. The erythrocyte count has tended to improve with the hemoglobin.

Again as Dickstein and his group noted, many of these cases were in colored patients whose anemia was discovered incidentally or due to their need for elective surgery. With oral iron, we would surely have deferred the surgery many weeks or months, whereas with intravenous or intramuscular iron we have been able to proceed with the surgery within a week or two without blood transfusions. Our incidence of elective blood transfusions has reduced considerably since we have had parenteral iron available.

SUMMARY AND CONCLUSIONS

In 116 infants and children[7] with anemia resulting from iron deficiency, satisfactory clinical and laboratory results were achieved when iron was administered either intravenously or intramuscularly. The responses in these children were more rapid and were more sustained than with oral iron.

Of our intravenous injections, reactions which were encountered were all of a mild nature, febrile, and of short duration. In the intramuscular iron, no systemic reactions have been encountered with over 300 injections having been given. If improperly injected, some staining of the skin occurs.

Conclusions: When oral administration of iron is ineffective, when the parent or patient cooperation is doubtful or when surgical intervention is needed within a week or two, parenteral iron therapy seems to be ideal for treatment of iron deficiency anemia. The advantages of the parenteral route in chronic and subacute inflammatory diseases and in gastro-intestinal disturbances is also apparent. The intramuscular route seems most desirable in infants and children unless, as in one case of ours, an intramuscular site is not available. In this instance due to third degree burns of the child's buttocks and deltoid area, the iron was given intravenously. Finally, intramuscular and intravenous iron seem far safer and results seem much better than would be anticipated with blood transfusions in the same degree of anemia. Responses to this form of therapy clinically seem better than hematologically but in both instances are good.

REFERENCES

1. Sturgeon, Phillip, Iron Metabolism, a Review with Special Consideration of Iron Requirements During Normal Infancy, Pediatrics, Vol. 18, No. 2, August 1956, pp. 267-298.

2. Editorial, Journal of American Medical Association, Volume 162, No. 3, September 15, 1956.

3. Smith, Carl A., New York Hospital, Cornell Medical Center, Transfusions in Pediatric Practice; Pediatrics, Vol. 17, pp. 596-604.

4. Chris, William E., One Pint of Blood; Obstetrics and Gynecology, February 1956.

5. Dickstein, et al; Intravenous Iron Therapy in Iron Deficiency Anemia of Infancy and Childhood; American Journal of Diseases of Children, Vol. 84, No. 1, July 1952, pp. 52-63.

6. The material used for this study, Imferon, was generously supplied by the Lakeside Laboratories, Milwaukee, Wisconsin.

7. Acknowledgement is given to Dr. Virginia Small whose extensive work and use of Imferon from the beginning of the study has enabled us to achieve a much broader experience with this drug. It is hoped that with Dr. Small's assistance we will be able to report further data on premature and very young infants treated with this material. Approximately 20 patients in this category are now under study.

Tonsillectomy from the Pediatrician's Viewpoint*

T. Y. WILLIFORD, JR., M.D.
Greenville, Miss.

In recent years physicians are becoming more and more reluctant to remove tonsils. There is very sound reasoning behind this reluctance. Over the years many a tonsil has been removed for the simple reason that "they were big," therefore they ought to be removed. Tonsils should be removed for a definite reason and definite results should be expected. When these results are not achieved, it can only be said that they have been removed needlessly.

Let us review the growth of different systems of the body and we can readily see that in the majority of cases that large tonsils are physiological. The only system that grows beyond 100 per cent is the lymphoid system. Growth increases at a rapid rate and by the age of 7 years has reached 100 per cent growth. By the next 5 years it grows another 90 per cent. In other words, lymphoid tissue grows 190 per cent, reaching its peak about 12 years of age. From 12 to 20 years the size is reduced to its 100 per cent level. From this over-all picture of growth it can easily be seen how a 7-year-old child can have large tonsils.

Tonsils and adenoid tissues are in the throat for a definite purpose. They form a first line of defense for infections about the nose and throat, waxing and waning with each infection in the area. Tonsils and adenoids also serve as a source of antibody production, it is thought by some groups. Removing this tissue will only remove a defense mechanism to infection and the child can still get a sore throat if exposed. Recently, in one of the New England states, about 150 children were followed for a year and a half after being selected as candidates for tonsillectomy or adenoidectomy. All these children had definite indications for tonsillectomy at the beginning. At the end of the year and a half, only about one-fourth of those children still had indications for T & A.

What are tonsils and adenoids removed for? Certainly there should be some indication. Let us review some of these indications and possibly go into a little detailed discussion.

(1) *Repeated attacks of tonsillitis, in other words, every few weeks or so, not 5 or 6 during the year.* Every child is going to have a certain amount of sore throats. There is no way to prevent this. Tonsillitis is contracted from someone else with an upper respiratory infection. It is not uncommon for children to get sore throats from their parents. When an adult gets a sore throat, it feels a little scratchy for several days and that's usually as far as it goes. If the children get it, well, it's fever, sore throat, and here we go again.

(2) *Old chronically infected tonsils.* This is sometimes difficult to determine by inspection. The outward appearance may show only small tonsils, yet the major portion of the diseased tonsil may be deeply imbedded between the pillows. History, here, is much more important than examination of the nose and throat. It is these children whose general health seems to be impaired

---

*Presented before the semi-annual meeting of the Delta Medical Society, October, 1957.

that tonsillectomy is most gratifying. I'm sure that you have seen malnourished children 5 or 6 years of age who improved tremendously after tonsillectomy. One can usually get history of almost a constant sore throat. All tonsils do not hypertrophy when they become infected. It is amazing how much the size will decrease usually when the infection subsides. In trying to determine the chronicity of tonsillar infection, the constant presence of cervical lymph nodes are sometimes helpful, especially the submaxillary nodes just anterior to the angles of the jaw. It is very seldom that you will see chronically hypertrophied tonsils that cause an obstruction to swallowing.

(3) *Quinsy, or peritonsillar abscess is an indication for tonsillectomy.*

(4) *Tuberculous cervical adenitis.* This is considered by Dr. Robert Gross to be an indication in all cases. This has been a debatable subject recently. One group of physicians found only two foci of infection in 12 cases of tuberculous cervical adenitis and felt that tonsillectomy was not indicated in all cases. I believe it is the opinion of the majority that they should be removed, however.

(5) *Removal of tonsils and adenoids are recommended for carriers of diphtheria.* There are no other indications for tonsillectomy. Rheumatic fever and nephritis *per se* are not indications. There are no systemic infections that are indications for tonsillectomy.

In the past it has been customary to remove the adenoids along with the tonsils. There are occasions arising, however, when only adenoidectomy should be recommended. This condition seldom arises. It has been felt that if the adenoids are removed, the tonsils should be removed also.

What are the indications for adenoidectomy?

1) *Persistent mouth breathing.* These children are unable to breathe through their noses because of nasal obstruction. At night they can be heard all over the house snoring. Their speech has a definite nasal twang, if this obstruction has been there any length of time.

2) *Repeated attacks of otitis media.* This we see not too infrequently. Hypertrophied adenoid tissue sometimes crouches on the ostea of the eustachian tube and prevents drainage. This is an ideal setup for otitis media and repeated attacks. Decreased hearing may occur by the same process and is another indication. Even after adenoidectomy, small fragments may still be present and cause blockage. Here irradiation has been used to fairly good advantage in some cases.

3) *Recurrent nasopharyngitis.* The discussion on indications for tonsillectomy also applies here.

I think it would be appropriate before closing to mention tonsillectomy in relation to bulbar polio. With the availability of a more effective vaccine against poliomyelitis, the question of the relationship between polio and tonsillectomy becomes less important. As yet, however, poliomyelitis is a disease that must claim considerable attention until that state exists. It has been shown that bulbar polio is more prone to occur in those children who have had recent tonsillectomy during a polio outbreak. How long after tonsillectomy this would be prevalent would be rather a fine line to draw. Recently a paper has been written from the University of Minnesota on "The Absence of Tonsils As a Factor in Development of Bulbar Poliomyelitis." I will not quote the statistics from this paper, but the conclusion was "If clinically recognizable poliomyelitis develops in a person who has had his tonsils removed, the likelihood of bulbar involvement is four times as great. The higher proportion of bulbar involvement in patients who have had tonsillectomy occurs at all ages regardless of the time that has elapsed since operation. No inference is to be drawn concerning desirability of tonsil removal, although the data do carry a suggestion of the importance of suitable indication for removal before it is undertaken." The latter statement that bulbar polio is four times as great regardless of the time that has elapsed since tonsillectomy is the one with which many clinicians do not agree. The time limit is the one disagreement. Either way, it would behoove us not to remove tonsils during polio season.

The cure of a sick, corrupt, decaying and disintegrating culture is lodged in the restoration and renewal, in the spiritual rehabilitation and moral regeneration of every individual soul.

RESEARCH IN OUR SOCIETY

The Importance of Medical Investigation*

WILLIAM A. NEELY, M.D.†
Jackson, Mississippi

SINCE THE LAUNCHING of the Russian space satellite, much attention in the United States has been focused on research and education. It is therefore of much theoretical, as well as practical, interest to examine the research process at this time.

WHAT IS RESEARCH? To begin, we must have a definition. In essence, research is the process of conceiving ideas or *hypotheses, and of subjecting these ideas or hypotheses to* verification, either by experimental methods or rigorous mathematical proof. All of our progress in any particular research field has begun with an idea. It is not always necessary that the idea be proved or that the basic reasoning leading to the idea be sound. Moreover, one cannot always tell just what is going to come from a particular line of research. At times the investigator himself is startled by the sharp turn that a research problem may take. Suddenly he may find himself completely removed from the original idea but, at the same time, pursuing some line of fruitful endeavor.

ORIGIN OF EXPERIMENTAL METHOD. The experimental method, which is used most of the time to verify ideas and concepts, is thought to have been originated by an English lawyer-scientist, Francis Bacon, in the sixteenth century.

As with most concepts in Western civilization, there are two sides to every question, just as we have Republicans and Democrats on our political scene today. There are the true experimentalists who hold that nothing is valid until proved or arrived at by the experimental method. According to their beliefs, Einstein's theory would be valueless until proved. As we all know, the usefulness of Einstein's theory was proved by the detonation of the atomic bomb in 1945. On the other hand, there are the reasonists who believe that reason shall prevail. These are more or less the thinkers of our scientific society who usually start out by making certain basic assumptions and arrive by the process of inductive reasoning at conclusions which they feel do not necessarily require experimental proof for verification. I think that it is reasonable to assume that all mathematicians fall into this latter category. To oversimplify the point, the reasonists believe that reason comes first and experimentation later; whereas the experimentalists believe in experimentation first and reason later. In other words, the experimentalists hold that nothing is valid until it has stood the test of experiment.

FREEDOM OF RESEARCH. Of fundamental importance in our society today is the question of regimentation in research. I believe, and many others believe, that this should not be done. Most of our great discoveries in the past have been made by men who are working on fundamental problems such as Einstein's theory of relativity. No one in the early 1900's, when Einstein conceived and published the theory of relativity, had any idea that it would have such far-reaching implications to Western Civilization. If we attempt to regiment research, many discoveries will not be made that would be useful to our society, for no one man or mechanical brain can possibly foresee the turn that research will take; nor can it be foreseen just what discoveries today are going to be useful tomorrow. It is said by some philosophers that the highlight of Western Civilization occurred during the fifteenth and sixteenth centuries at the time Newton and Leibnitz developed calculus, Bach developed counterpoint in our music, and the great artists of that era developed landscape painting so highly.

One cannot mention all of the discoveries that have enhanced Western Science, but Einstein and Maxwell should be included for their contributions to the development of the atomic theory. Of course, the Russian, Mendeloff, who formulated the periodic table of the elements, should stand high as a contributor to our science.

If research were regimented, Fleming's chance observation in 1925, of the anti-bacterial effects of the mold *penicillium notatum* might never have been made. As it was, twenty-five years elapsed before this discovery was utilized for the benefit of mankind.

HOW CAN AMERICAN RESEARCH BE ADVANCED? What can be done by our society to encourage research? First, we must encourage bright young people to go into the field of science and research. Today it is much more profitable for a young man with a good mind to become a business man rather than a scientist. There seems to be a sort of stigma attached to being a scientist. Scientists are not supermen; they are ordinary human beings engaged in making their living by teaching and research.

---

†From the Department of Surgery, University of Mississippi Medical Center.

*Based on an address delivered before members of the Air Force Reserve in October, 1957, at Jackson, Mississippi.

Our society has reached the state in its development where more recognition and financial gain may be given to a brick mason than to someone engaged in fundamental research that may benefit us all tomorrow. Some rectification of the social and economic status of people engaged in teaching and research must come about if we are to regain our scientific pinnacle.

Our schools must emphasize mathematics and literature. Social sciences must remain on the curriculum but should not receive as much emphasis as they have been receiving.

Our high school courses should be toughened up. All of us do not need a college education or even a high school education. It is a waste of time and money to educate everyone that becomes of an educable age. It would bankrupt us and lower the educational standards for everyone at a time when high educational standards are a prime necessity.

Except for financial support, the Federal Government should remain out of research, as it has in the past, except for specific programs necessary for national security. Unfortunately, because of the present prohibitive taxation, research can not thrive without government financing. As long as this situation prevails, Federal support is mandatory because private sources of research money have been taxed out of business. Any financial aid by our government should be given to competent investigators with "no strings" attached. Some way must be found for the unestablished young investigator to find money for his projects. This is met to a certain extent by United States Public Health Service grants.

The government should continue to conduct its own research programs that are necessary for our domestic tranquility and defense. Wide exchange of information between government scientists and those not connected with government research is imperative for our national survival. It has been widely publicized that the Russians stole the atomic bomb from us. What has not been publicized is the fact that there are excellent scientists in Russia that have put us in the same predicament that we thought Russia to be in several years ago.

Research planned for a specific purpose should not be primary in importance because no one can predict just exactly what field or subfield will prove productive. Every time a well designated experiment is performed, something is learned. Results cannot be measured immediately but must suffer the trials of time before it may prove useful. A large percentage of all research is unproductive as far as the original idea is concerned; but some new idea comes to mind or some side issue arises out of which fundamental contributions come. Fleming's discovery of penicillin is just such an example.

HISTORY OF RESEARCH. To understand a little more about research, we must take a brief look at some of the ancient civilizations and look upon their attitude toward science. The ancient Hindus, for instance, had no concept of time and consequently we know little about their history as far as their science is concerned. However, even this ancient civilization contributed fundamental principles of trigonometry which Western Civilization has used in its struggle for supremacy. On the other hand, the Chinese had good concepts of time, and we know more about their civilization because of their habit of associating events with dates. The Chinese civilization, or remnants of such, is the oldest surviving civilization.

The Egyptians, as we all know, had a very good concept of time. The Greeks, however, were very much like the Hindus. Time did not mean much to them, and consequently, we know little about their early civilization. However, the Greeks were probably the first true scientists as we define scientists today. They had a very narrow outlook though. As far as a Greek was concerned, nothing existed beyond the city state or beyond the horizon. In fact, whenever he traveled from one place to another, different gods were thought to hold sway at different places. The concept of infinity was non-existent. The Greek believed only what he could see, and if something could not be seen or felt, it did not exist. Consequently, many horizons of investigation were not open to the Greek because of this fundamental flaw in his philosophy.

The Romans were not scientists at all, but administrators. They copied the Greek science. Nothing of great importance was contributed to science from Greek times until the beginnings of Western Civilization during the Renaissance. Several concepts, of which the concept of infinity is the most important, arose during this period. Not only did this lead to the great astronomical discoveries, but, on the other hand, led to the great microscopic discoveries as well.

PRINCIPLES OF RESEARCH. To the uninitiated research seems to have some mysterious connotation. However, it is a simple, straightforward, well-planned venture, involving six principles. First, there must be a clear, concise concept of what is to be done, or a new idea or a doubt about an old idea. Second, the research plan must be formulated just as battle plans are. The ways and means of testing the concept or hypothesis must be well thought out. Third, the equipment necessary to test the concepts or hypotheses must be assembled. Some scientific equipment is quite expensive, but most of the fundamental discoveries in our time have been made by quite simple equipment. In fact, nearly all of this equipment has been designed and manufactured by the scientist concerned. In our society today, however, research has been speeded up by the complicated, high-speed computing and other electronic equipment. Fourth, and probably most important, there must be much hard work involved in carrying out the plan that might mean loss of sleep for one week, or going without meals, etc. For once an experiment is in progress, stopping may be a loss of what has been accomplished to date. Fifth, conclusions must be drawn from data assembled during the work. These data must be sifted, tabulated and arranged in the most advantageous manner, and conclusions must be drawn. Lastly, the experiment and its results must be published. All of the brilliant research in the world would go to naught if the information could not be distributed to others for their use and verification. Scientists should be encouraged to publish their results, and a good scientist must also be a good writer.

IMPORTANCE OF RESEARCH IN OUR SOCIETY. Let us pause a moment to reflect upon the importance of research in our society. Without it, progress would cease, and if progress ever stops, there must be a regression. Weapons of war, such as modern airplanes and missiles, could not be developed. Metals, so necessary to stand the extreme heat involved, would not be forthcoming. Electronic devices that add to our comfort in everyday life, which are so important to our national defense, could not be improved upon or even built without experimentation. The very automobile that we drive would not have been had it not been for research. Think of the tremendous increase in power in modern automobile engines and of the tremendous development in modern automobile fuels. Just think of the man hours of experimentation that went into the modern high-compression automobile engine. There must have been many, many failures before such an efficient machine could develop.

A machine or electronic device of whatever type is no stronger than its weakest link. I am sure that there were many weak links discovered in our early automobile engines and transmissions that had to be solved by trial and error just as weak links in other research programs will have to be solved by trial and error, hard labor, and much expense. Farm machinery is another field where tremendous research has aided our society.

Think of our homes today without research. There would be no washing machines, gas or electric stoves, radios, television sets or automatic heating systems.

CONCLUSION. In conclusion, I would like to emphasize to you that research today is more important than it ever has been, and it will continue to be so far into the foreseeable future. We must take stock and reassess our values and encourage more and better research. Social and economic status of scientists will have to be improved. Better education for qualified individuals is imperative. The attitude of the public concerning research should be improved by adequate education.

What is needed and what is feasible is the conditioning of child and man in the practice of kindness, gentleness, consideration and sympathy. In no other way can society and civilization endure and go forward toward higher planes of goodness and happiness. KRIMSKY

INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW

JOSEPH P. MELVIN, Jr., M.D. .... Cardiology
HARVEY F. GARRISON, Sr., M.D. .... Pediatrics
JAMES D. HARDY, M.D., and STAFF, Department of Surgery, University Medical Center .... Surgery

CARDIOLOGY

Effects of Sitosterol on the Concentration of Serum Lipids in Patients with Coronary Atherosclerosis.

Fletcher P. Riley, M.D. and Alfred Steiner, M.D.
Research Service, First Division, Goldwater Memorial Hospital, Dept. of Medicine, Columbia University
(From: *Circulation*—Vol. 16, No. 5, November, 1957, Page 723)

Because of the recent investigative work and public interest concerning the use of unsaturated fats and fatty acids to reduce serum lipids, these authors administered a coloidal suspension of sitosterol (Cytellin - Eli Lilly) to thirteen patients in an attempt to evaluate the use of this plant sterol on serum lipid concentrations. Previous reports have indicated that sitosterol produces a fall in serum cholesterol in most patients with decreases in total serum lipids and serum neutral fat. In this study, the oral administration of sitosterol to these thirteen patients resulted in statistically significant decreases in serum cholesterol in one-half of the trial periods. However, because of the fluctuation of the serum cholesterol that occurs in patients with coronary atherosclerosis, further study is needed to demonstrate that this apparent decrease in serum cholesterol coincident with sitosterol administration is real and not due to the normal liability of the serum lipids in this group of individuals.

Comment: All practicing physicians are interested in any innocuous material that can be given by mouth, that can be expected to significantly and consistently reduce serum lipids. Logical reasoning would insist that such lowering, if carried out for long enough period of time, should definitely reduce the natural progress of atherosclerosis with a consequent decrease in its complications. Possibly, given prophylactically, these substances could be used to prevent atherosclerosis. However, no long-term studies have been carried out to show that such is the case and many unanswered questions need to be answered. One particular question in most research workers' minds is whether this reduction in serum lipids can be quantitated against the alteration of the clinical course in patients with atherosclerosis. This is a statistical feat extremely difficult to prove, and I am sure that many years will elapse and many thousands of patients will be treated with these plant sterols before an answer is forthcoming.

PEDIATRICS

Chest Deformity in Children with Congenital Heart Disease.

G. M. Maxwell. Am. Heart J. 54:368-375 (Sept.) 1957 (St. Louis).

The study of chest deformities in a group of children with congenital heart disease revealed that no sulci are found during the first year of life unless respiratory infection or obstruction is present. Marked Harrison's sulci occur in the presence of respiratory obstruction. Apparent "apical" bulging may be seen in such conditions as infantile bronchiolitis; this condition is usually reversible after the acute episode is over. A similar picture is seen in asthmatic children; this is more likely to become permanent because of frequent attacks of bronchial spasm. The chest deformity of pancreatic fibrosis was seen in one patient who presented no cardiomegaly, in one with tetralogy of Fallot, and in one with left-to-right shunt. These three patients suffered frequent respiratory infections.

"Pigeon-breast" was observed in a series of patients with congenital heart disease. No evidence of healed rickets was found at roentgenologic examination in a 20-year-old boy with a patent ductus, gross cardiomegaly, and frequent respiratory infections. No radiologic or biochemical evidence of rickets was present in a child with transposition. This child had frequent respiratory infections; his vitamin D intake was adequate. A patient with bronchiectasis and pulmonary failure with a high functional residual capacity presented a normal heart size at roentgenologic examination. Clinical or radiologic evidence of rickets was absent and the vitamin D intake was normal. Respiratory infection was found to be a factor in some patients with "pigeon-breast." Rickets did not cause the grooves.

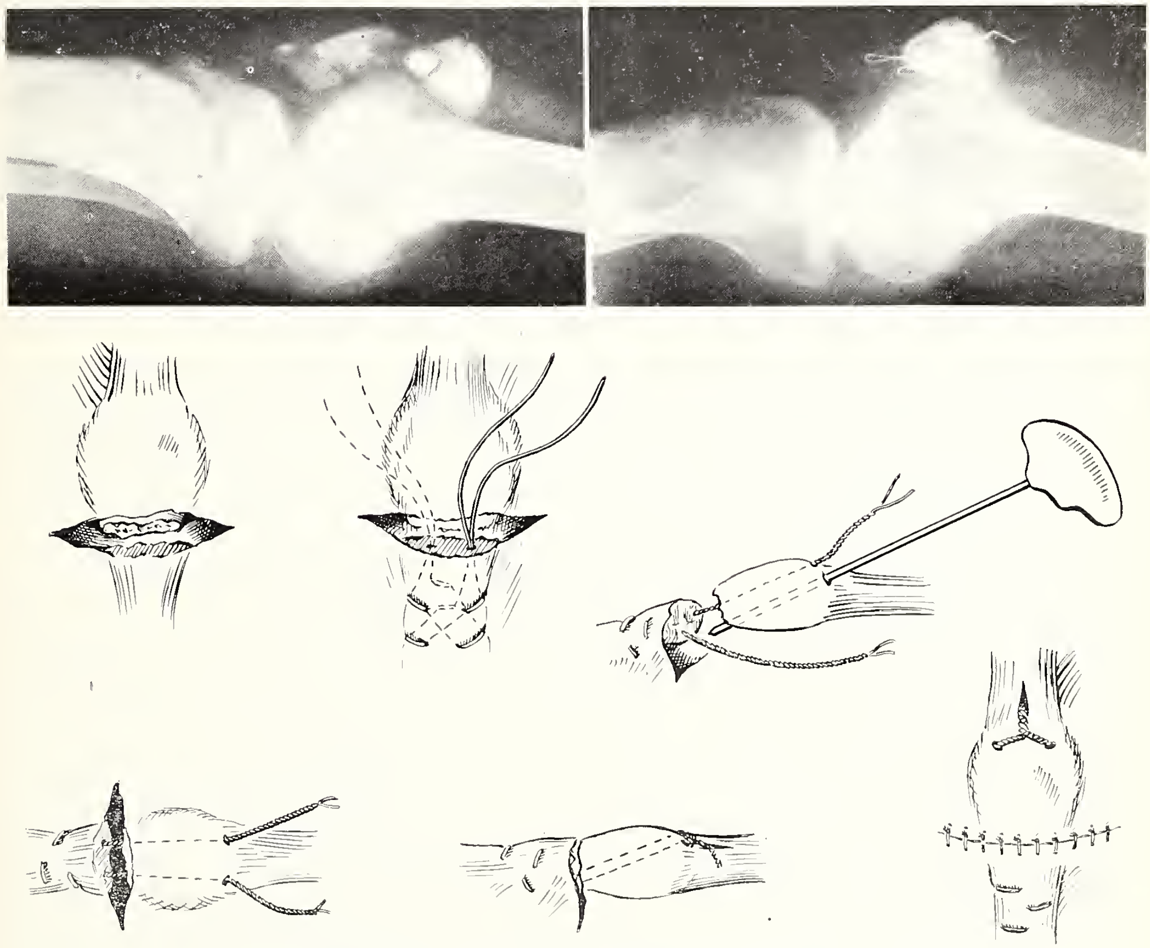
Comment

Deformities of the chest occur in many diseases and conditions in normal as well as abnormal children.

FRACTURE PROBLEMS

Leslie V. Rush, M.D.
Meridian, Miss.

Problem No. 12 of a Series



COMMINUTED FRACTURE PATELLA

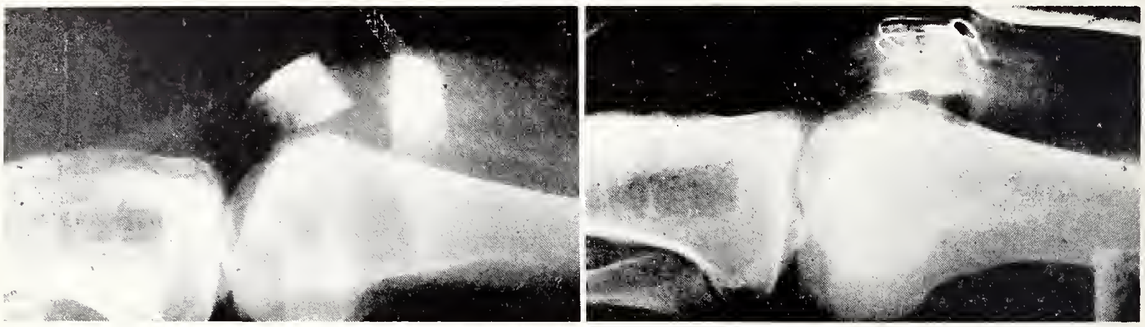
FIVE MONTHS UNTREATED

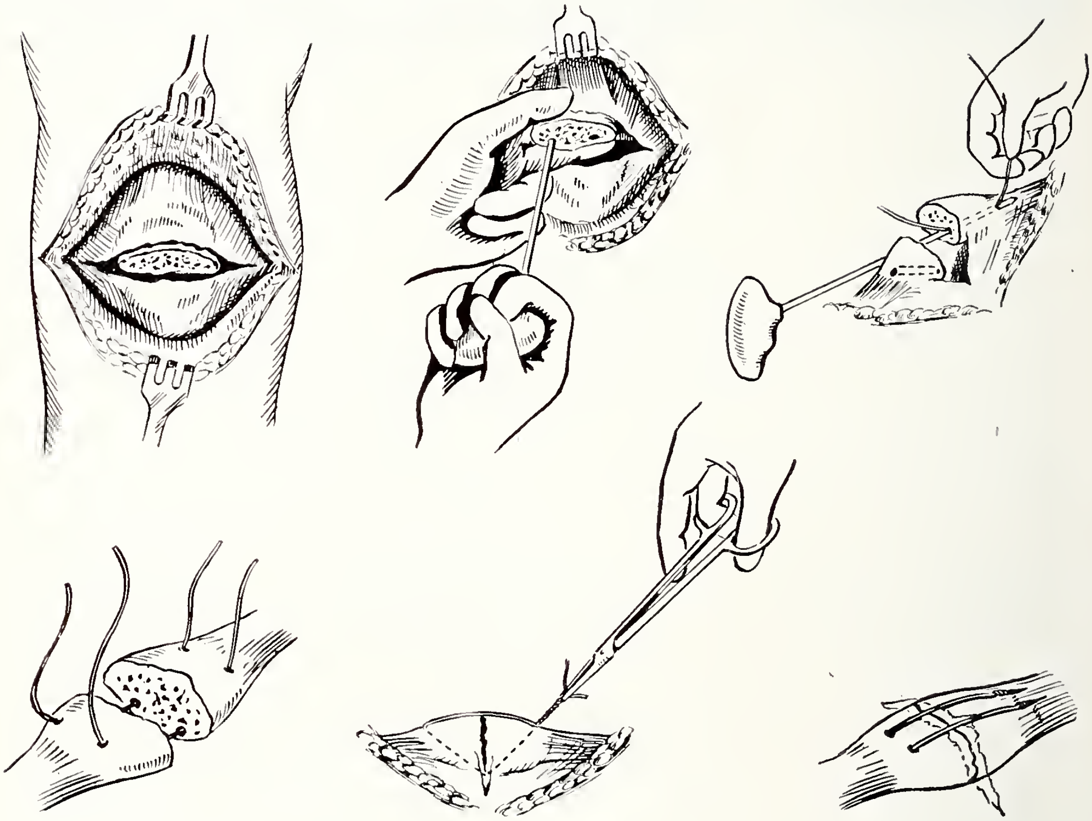
Male age 19. Avulsion of patella tendon with crush fracture. Five months duration.

Treated by removal of fragments. Tendon fixed to upper fragment by tendon sutures, using fine diameter wire (type 316 stainless steel). Fascia lata could have been used in similar manner. Immobilized three weeks.

Aids in technic: Transverse incision. Tunnel in bone made by awl-reamer which is easier to direct than drill. Also used as groove director for threading wire through openings.

Technics here depicted are shown only because they have been found useful. No claim to originality is made.



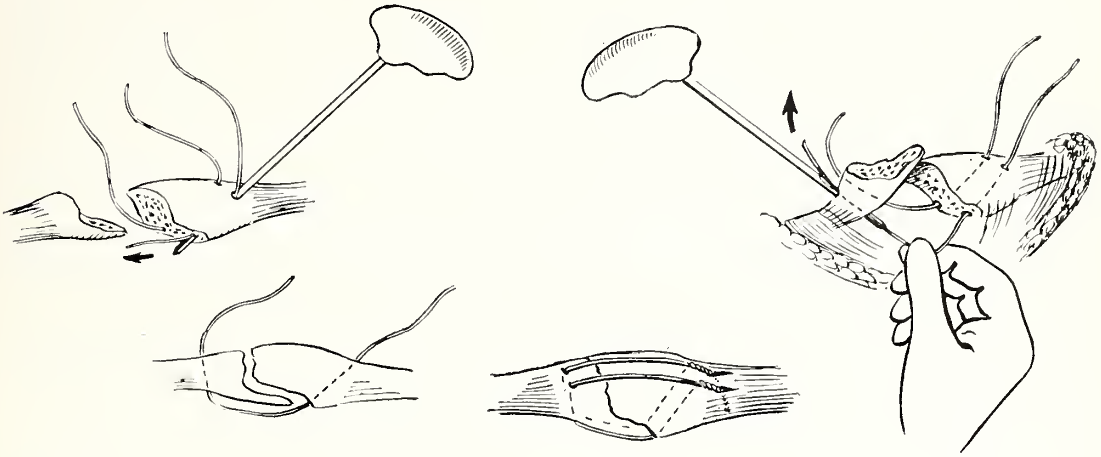


SIMPLE TRANSVERSE FRACTURE—PATELLA

Wires pulled taut to close fracture line before rent in synovia or capsule is repaired. Angle at which wires are placed assures snug approximation of fracture surfaces.

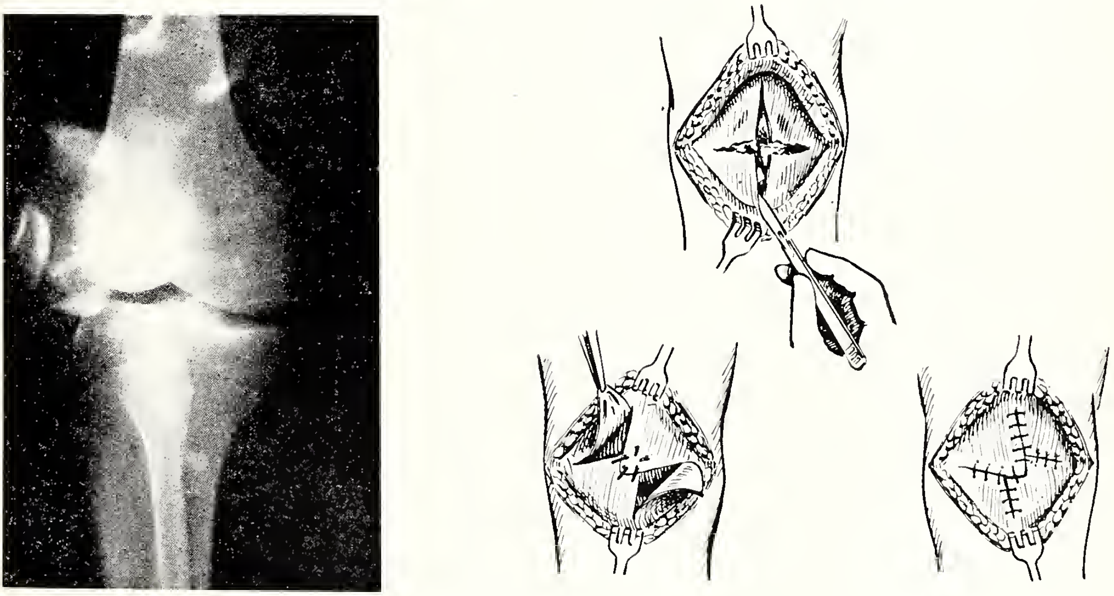
Wire twist deeply buried in quadriceps tendon. Longitudinal incision in aponeurosis overlying patella to make bed for wire assures tight fixation.

When fixation is stable and wire is of large enough diameter, motion can begin cautiously at one week.



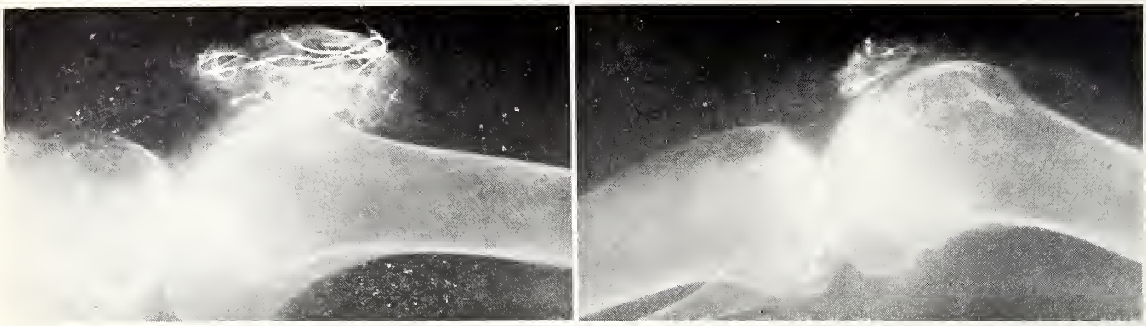
OBLIQUE FRACTURES

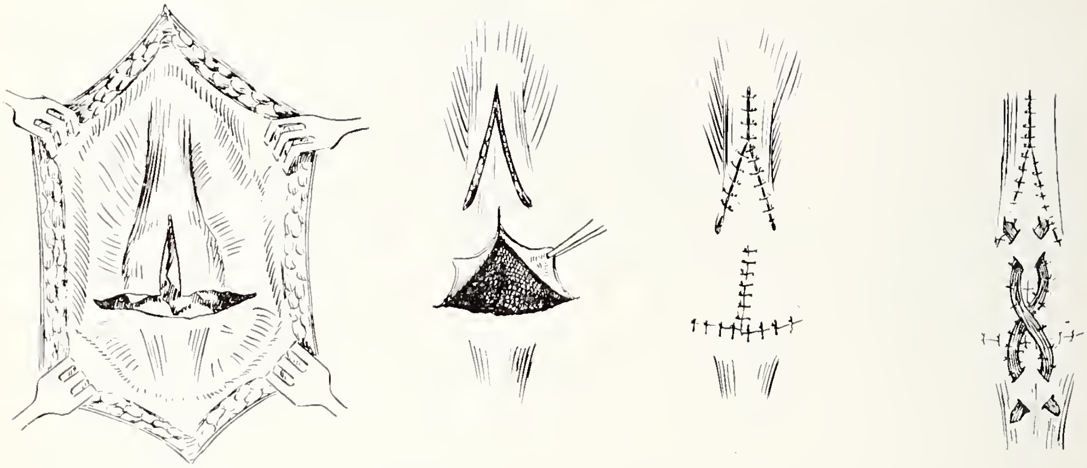
Wire loop over distal fragment cuts into cartilaginous surface of patella when wire is twisted taut so that it does not project into joint. This technic prevents offset and angulation of distal fragment.



CRUSHED PATELLA

Simple excision of patella is best in bag of bones fracture.





REPEATED FRACTURES OF PATELLA

(FIFTH TIME)

Female age 41. Patella had been repaired by wire four times prior to this injury. Fractures due to falls; patient had never regained right angle flexion.

Patella excised. Intra-articular adhesions severed. Quadriceps tendon lengthened. Aponeurosis over patella very thin and friable. Quadriceps tendon joined to patella tendon by strips of fascia lata.

No recurrence of injury in five years.

Medical School Miscellany

ADMINISTRATION IS AN ART

Administrative skill draws upon every resource of the mind and spirit if it is to measure up to its responsibility with insight, intellectual power and human sympathy for the productive release of human talent, Chancellor J. D. Williams said at the University Medical Center in January.

Taking "Administration Is an Art" as his topic, the University of Mississippi chancellor explained that "basically and fundamentally, administration is an art because it must be concerned primarily with the hopes, aspirations and emotions of people if it is to be successful."

One of the primary tasks an administrator faces, Dr. Williams went on, is developing aims that are common among all those who are working with him, aims which must be compatible with his own.

"The process of having the common aims accepted by all or a substantial number should be one that contributes to the growth—mental and spiritual—of those who are involved," the speaker said. "The aims might be imposed from top administration. The motive for acceptance could be to prevent losing one's job. Few who know of or can imagine such a procedure would endorse it as being best in the long run," he added.

Averring that the administrator who is the artist is genuinely concerned with the aspiration, process and method, Dr. Williams recommended the procedure of administration generally described as democracy.

"It is not the easiest, the quickest or the surest way to handle human relations in the short run," Chancellor Williams conceded. However, he declared, "as responsible persons in society, administrators under all but the rarest emergency conditions must look at the long run."

The administrator who follows democratic methods necessarily bumps up against many questions, the speaker added. He must consider whether the majority is always right, what matters shall be voted on, whether too much talk results. Yet other questions faced by the administrator are whether democracy encourages mediocrity, leads to confusion of authority and responsibility or to decisions taken without reference to long run consequences.

The wise administrator must be aware of these questions in any democratic action, Chancellor Williams cautioned, adding that "his artistic ability as an administrator will be measured in the quality of leadership he is able to provide to overcome these difficulties."

Warning his listeners against indifference disguised as peace and harmony, Chancellor Williams declared that an "organization is dead or dying when those in it prefer to be indifferent to their freedoms" rather than to accept the responsibility of sharing its management.

Labeling yet another organizational disease, complacency, as the most deadly and subtle, Dr. Williams defined it as the condition in which individuals are too indifferent to participate actively in the problems of management and the administration is too complacent to care. "Where there is reluctance toward accepting reasonable responsibility, there is certain to be less freedom," he maintained.

Asserting that there is no more exacting art than that of administration, the chancellor analyzed its functions and those aspects which include the right of every man to be treated as an individual and respected as a person. Administration is an art which looks to the productive "release of human talent," he concluded.

NO PLACE IN POLITICS

Our medical school is going along fine as far as we see. It is gaining in popularity and building health assets for our state. We have an able dean and a wonderful faculty. It is well located and under a fine board of trustees. Radical changes are not advisable at this time in our opinion. A medical school needs to keep out of politics as far as possible. It is a fine policy to have our institutions of higher learning under one board of trustees, the enrichment and elevation of our educational program unhampered by political changes. Let us stay with the best interests of our medical school.

Editor

MISSISSIPPI ACADEMY OF GENERAL PRACTICE

Tenth Anniversary Meeting

The AAGP meeting in Dallas, Texas, on March 24-27 marks a milestone in Academy history. It is the tenth annual assembly. It is expected to be the biggest yet, and the impressive list of speakers indicates it will be one of the best.

Dallas is closer to Mississippi than any other city big enough to accommodate so large a meeting. Which means that this is the best opportunity for all Mississippi Academy members to attend the nation's best medical meeting at minimum cost.

Besides the scientific lectures and exhibits, important points of policy will be discussed by the Congress of Delegates, which meets Saturday, March 22. All members are invited—in fact urged to participate in the Reference Committee hearings.

A special film, depicting highlights in the Academy's ten-year march of progress, will be shown on Monday, March 24.

Social events will include ladies' entertainment and the president's reception and dance for everyone on Wednesday, March 26.

Mississippi will have a hospitality suite in the Statler Hilton. All Mississippians attending are cordially invited to come and bring their friends. It will be open most of the time during the entire meeting.

Lots of Opportunities

In addition to the 15 hours of Category I credit for attending the AAGP Assembly, several programs in Mississippi and nearby states are coming up.

A one-day postgraduate course on Care of Amputees will be conducted by the Division of Orthopedic Surgery of the University of Mississippi School of Medicine on February 28.

The Mid-South Postgraduate Medical Assembly meets in Memphis on February 11-14.

The New Orleans Graduate Medical Assembly, recently awarded recognition for Category I credit, will be held March 3-6.

The Annual Cardiovascular Seminar of the Mississippi Heart Association and the University of Mississippi School of Medicine is set for April 2-4 at the University Medical Center.

All this adds up to about 100 hours of (Category I Credit) postgraduate instruction readily available to Mississippi physicians in the space of only six weeks. There's lots of opportunity, if we want it.

Home Care of Tuberculosis

The Mississippi Trudeau Society offers physicians in Mississippi an invitation to hear Dr. Raymond Hofstra discuss home care of patients with tuberculosis. His address will feature the results of a survey of patients in Mississippi.

The lecture will be held in Jackson on April 9 at 7:15 p.m. Dr. Hofstra is a consultant to the Division of Special Health Services, Department of Health, Education and Welfare.

One hour of Category II credit will be granted for attending the lecture.

CONFERENCE ON RURAL HEALTH

The 13th National Conference on Rural Health will be held at the Hotel Heidelberg, Jackson, Mississippi, March 6-8, 1958.

The Conference will begin at 10 A.M. on Thursday, March 6, and conclude at noon on Saturday, March 8. Patterns in Nutrition, Health Costs, Medical Care, Dental Health and Safety have all changed and will continue to change and therefore need careful study. The conference theme is "As the World Turns."

President's Page

During January, it was my pleasure as your president to address one of the larger bar associations in our state. The occasion impressed me with the opportunities which the medical and legal professions have to work together and build bridges of understanding between human rights and human health. From medicine's viewpoint, only the American Medical Association has exercised initiative in urging better, continuing relations between medicine and the law.

It's almost tragic that medicine and the law have been such absolute strangers during most of recorded history. Codes of jurisprudence and canons of ethics for the legal profession date back thousands of years, even possibly beyond the Code of Hammurabi. Ethical systems of healing which medicine knows today go back as far as five centuries before Christ and moral declarations in behalf of scientific medicine and ethical practices predate even this remote era of antiquity. Medical jurisprudence is a more recent innovation involving the professions of medicine and the law, possibly only about a century old.

It is obvious to all physicians that definitive relationships between lawyers and doctors are a compelling necessity in our complex society. Many of the cases before the bars of justice hinge almost exclusively upon medical testimony and medical fact. Similarly, medical practice itself has found need for the precision of definition in positive interpretation which only an attorney-at-law can give.

The affairs of medicine's body politic at all levels have become so tremendously complex and interwoven with the socioeconomic structure of society that service by the legal profession is indispensable. Whether medicine likes it or not, it has been carefully and deliberately woven into nearly every aspect of the law and most certainly into precedents set by the courts of the nation. The expert medical witness is almost as familiar a figure as the bailiff himself and the lawyer has no choice but to place a reliance upon the physician as he makes his point to the judge and jury.

At the national level, the American Bar Association and our own American Medical Association maintain close and active liaison. AMA has a highly competent full-time law department and, additionally, an outstanding Chicago law firm is retained as outside counsel requiring the full-time service of one senior partner and his personal staff. Our own state medical association enjoys regularly the service and advice of an attorney as do other medical associations and societies. Even as individuals, doctors have their lawyers—just as lawyers have their doctors.

The AMA, in the exercise of initiative to build a better understanding of the law and the physician's role in the administration of justice, has worked closely with the William S. Merrell Company in the production of a series of medicolegal films. To date, two such films have been produced: One is "The Doctor Defendant" and the other is "The Medical Witness." Each of these thirty-minute films is available for use by local medical societies or hospital staffs and may be secured by writing AMA. There are plans for additional films in this same area.

Local medical societies can bring close understanding between medicine and the law by working with county bar associations. Often, liaison committees can function effectively and consider mutually problems of interest to both professions. Ours is a society of interdependence and it is to our advantage and in the interest of the best possible medical care for all citizens that our relations with interdependent groups are the best we can make.

H. A. N.

We need a fine nursing school on the University campus, one with which we can affiliate our smaller nursing schools over the state. Hill-Burton hospitals and junior colleges can join together and give us the very finest type of nursing with the help of the University school.

Editor

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $3.00.

Published monthly at 104 Hospitality Street, Booneville, Mississippi. Return postage guaranteed.

W. H. ANDERSON, M.D.	Editor-in-Chief
MILDRED P. ANDERSON	Assistant Editor

MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY

C. W. Patterson ,M.D. Rosedale, Miss.	President
J. Max Roy, M.D. Forrest City, Ark.	President-elect
C. L. Chumley, M.D. Nashville, Tenn.	Vice-President
Lon E. Reed, M.D. Hot Springs, Ark.	Vice-President
R. B. Cunningham, M.D. Booneville, Miss.	Vice-President
Thurman Crawford, M.D. Memphis, Tenn.	Secretary-Treasurer

Mid-South Associate Editors

H. King Wade, M.D.	Hot Springs, Ark
R. L. Sanders, M.D.	Memphis, Tenn
Frank M. Acree, M.D.	Greenville, Miss.

MISSISSIPPI STATE MEDICAL ASSOCIATION

Howard A. Nelson, M.D. President	Greenwood
Guy T. Vise, M.D. President-elect	Meridian
Geo. W. Twente, M.D. Secretary	Jackson
Rowland B. Kennedy Executive Secretary	Jackson

State Associate Editors

Louis F. Rittelmeyer,M.D.	Jackson, Miss.
John T. Bryan, M.D.	Meridian, Miss.

The Publication Committee is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.

Address all material for publication to W. H. Anderson, M.D., 104 Hospitality Street, Booneville, Mississippi.

POTS, FLOWERS AND FACTS

The political pot is boiling again, with a distinctly medical aroma, on both the state and national scenes. Here at home, the chiropractors are making another all-out push for legal status. In Washington, the Forand Bill (H.R. 9467) would give "free" hospital, nursing home and emergency surgical care to 13,000,000 beneficiaries under Social Security.

The chiropractors, already successful in getting a "school" chartered on the coast, are campaigning for their own licensing board. Mississippi is one of four states that does not license them. Because of this tenuous legal foundation, relatively few chiropractors set up shop in Mississippi.

So the home-grown ingredient in the political pot is the unappetizing, malodorous cultist herb, *Chiropracticus domesticus.*

On the Potomac, a different flower is blooming. It is more foreign than domestic, too insidious to be fetid, and a thousand times more destructive than a handful of cultists fighting for legitimacy. The Forand bill provides for "free" hospital care for ALL persons receiving O.A.S.I. retirement or survivorship benefits. Here is Welfare Statism with a twist: let the next generation pay your medical bills, chain letter style. Very sweet, indeed. But this perfumed blossom is just a camouflaged branch of an alien shrub, *Marximus socialismus.*

It is very well to sit back and write about political pots emanating medicinal fumes from the dry-rot of foreign and domestic quackeries. But it accomplishes little unless accompanied by the less flowery but more forceful language of facts.

So here are some facts.

It is a fact that unless physicians are awakened from their individual and collective lethargy about things political, we will have legalized quackery in Mississippi *this year!*

It is a fact that unless physicians shed their individual and collective insensitivity to civic obligations, we will have a "little" bit more socialized medicine *this year*! (And a "little" socialism bears a striking resemblance to a "touch" of pregnancy. It keeps growing.)

It is a fact—and politically speaking this is the most basic fact of all—that our elected representatives, state and national, respect the fact that the people who put them in office can also remove them.

If we are not heard, it is only because we refuse to speak, loud and clear, for what we believe. It is too late to be naive and say you're a physician—you leave politics to the politicians. The time has arrived when we must *talk medicine* to the politicians—or let the chiropractors and bureaucrats split the spoils.

This is *your* job, individually. It becomes *ours* only when you do your part—and every one else does his. And our voice had better be heard—*this year!* (L. F. R.)

FORMS . . . FORMS . . . FORMS

Until recent years a physician or surgeon who was inclined to confine his work to the practice of medicine was able to do so with a minimum of outside interference. That happy state no longer exists. He now finds himself playing the role of a captive and unpaid employee of countless insurance companies.

Today each mail and a goodly number of the patients who come to the office bring forms of every conceivable size, shape and color, each of which must be filled out carefully from top to bottom else the patient will not be reimbursed for his hospital or medical expenses, or the time lost during his illness, or he may be in danger of not having an insurance policy renewed, or a new policy issued, as the case may be. All of this means the physician finds his desk littered with insurance blanks every time he returns to his office and a considerable amount of time and attention is diverted from the patient and directed to filling out these interminable forms.

It is true that for many patients a health and accident policy of some type is the only form of medical security available. The fault lies not in the policy but in the antiquated, wordy, unnecessarily long and repetitious forms the physician or surgeon is called upon to complete. Some of the insurance blanks obviously were prepared before hospitals had come into general use, for there is no provision for indicating that the patient is or has been hospitalized. Other forms make no reference to possible surgery. These shortcomings are not so surprising when encountered in a weekly pay policy but it is discouraging to find the same type of forms adopted by some of the established insurance companies which have branched out recently into this type of medical coverage.

The most irksome policies require a weekly recapitulation of the entire dreary set of questions, many of which overshoot or fall short of the mark which they obviously were designed to attain. The fact that a patient patiently is going to be incapacitated for a period of weeks or months does not permit the by-passing of a single answer for a single week lest the patient lose the benefit of the policy.

The blandness with which the insurance company assumes that the most overworked physician will answer in detail each question, regardless as to how irrevelant it may be from the standpoint of the patient's physical status, is epitomized by the query as to whether this is the only insurance company from which the patient is receiving payments and if not, to enumerate the other companies. For unmitigated nerve this is one for the record. Does anyone ever answer that question?

The difficulties encountered by the physician frequently are compounded by an inability or disinclination on the part of the patient to fill out his part of the form. This means that just as the physician completes his part and as he turns to resume the work for which he spent many years preparing himself, the patient will say "Doc, I don't understand these things. Won't you fill out my part too?"

There are some outstanding and refreshing exceptions to the rule that a prepaid medical policy must be stupidly worded. The pink sheet of the Blue Shield Plan is a pleasure to behold. Even the Medicare blank, which of necessity must be dtailed, is simple compared to most of the insurance forms. These, however, are exceptional.

Medicine is extending its boundaries in all directions and has made more progress in the past half century than in all of preceding recorded history but each day physicians waste valuable time filling out health and accident forms, which were outmoded before they were adopted fifty years ago. A reform in this matter is long overdue but unless the physicians demand it we will continue to be imposed upon just as we have been in the past. H.J.W.

—Editorial from *Virginia Medical Monthly*
October, 1957

NEW CARE FOR INDIGENT

The per capita distribution of funds for the indigent sick in Mississippi laid the foundation for a fine service to our unfortunate sick. The system now needs to be revised and improved. The demand for more and better service is ever before us. Our state hospital and medical associations seem to have their heads and hearts together now to work out a better service for the indigent, while putting it on a basis that would be more economical for doctor, patient, and hospital. Every citizen in the state will be affected by this legislation, and it should be studied for far-reaching effectiveness. Good health is our greatest asset. Selfish interests should be kept in the background and service to the people should be our chief aim. We believe that our governor and the members of the legislature will do their best to cooperate with the medical profession and our hospital association in making possible adequate medical care for all our people.

MEDICINE IN THE YEARS AHEAD

As usual, all manner of prognostications have appeared with the new year. A significant one is found in the January 4 issue of the Journal of the American Medical Association. Written by Dr. Julian P. Price, a practicing physician and an AMA trustee, it forecasts some of the changes that will take place in medicine in the next 30 years.

The trend toward specialization will continue, in Dr. Price's view. There will be an increase in group practices in clinics which are staffed and equipped to furnish complete care for the ambulatory patient. At the same time, a new type of general practitioner will emerge to care for those who want individual physicians for themselves and their families. His work will consist of internal medicine, pediatrics and psychiatry, with office procedures in orthopedics, gynecology and surgery.

The hospital building program will continue, with the emphasis on more hospitals in suburban areas and the smaller communities of the country. The large metropolitan hospitals will add special wings for the care of the convalescent, the chronically ill, and the patient who needs rehabilitation.

On the scientific side of medicine, there will also be many changes. Due to the increasing number of older people, degenerative diseases will become of greater and greater concern to the physician. Most of the communicable diseases, tuberculosis included, will probably be eradicated. Leukemia and certain types of cancer will be curable. Diabetes will be treated without injections. Various mental diseases will be controlled through drugs. There will be better understanding of all manner of physical plagues—arteriosclerosis, coronary disease, hypertension, and so on. And electronics and atomic energy will be used extensively in the diagnosis and treatment of disease.

It is a bright prospect that Dr. Price presents. And there can be small doubt that independent private medicine will achieve these and many other great goals.

WOMEN LIVE LONGER

According to Dr. Louis Dublin from the Institute of Life Insurance the average life expectancy of women is now six years more than men, the average length of life for women in the United States now being 73 years and men 67. Since 1900, the gain for the nation as a whole has been 22 years, the life span for women having increased 25 years and men 20. More boy babies are born than girls but the girls have a better survival. In the 15 to 24 age group the death rate for males is three times that of females. Most all along life's way the women have a better health rate. In the last 15 years the death rate from cancer has decreased 10 per cent, but cancer rate for men has increased. For lung cancer it has increased 180 per cent. All the answers are not apparent for longer life for women. One basic reason could be because the female is more important for race preservation. Another, that women take more time out for illness, thus contributing to a longer-wearing system.

SPECIOUSNESS, NOT SCIENCE

The sudden awareness of Russia's scientific policy of educating about two in science to our one has brought to our nation the greatest challenge of the age. Science is truth and we need to know science and to follow its lead. The knowledge of science would be our greatest hope for progress, for conservation. Medical science for the last fifty years has astounded the world. The doctor knows the germs or parasites that cause gonorrhea, syphilis and malaria. He is very sure that no adjustment of the spine will stop the ravages of any one of these on the human body. The same can be said of the tubercular bacillus, diphtheria bacillus, and the pneumococcus. Medical progress has been made by painstaking and serious research. It is certain and sure that chiropractic is not real science and that society can not hope to gain by putting its trust in it. The medical profession will stand only on proved scientific methods and application, not on theory. It seems from every point of analysis that chiropractic can be only palliative and not curative, despite any claims made by its practitioners.

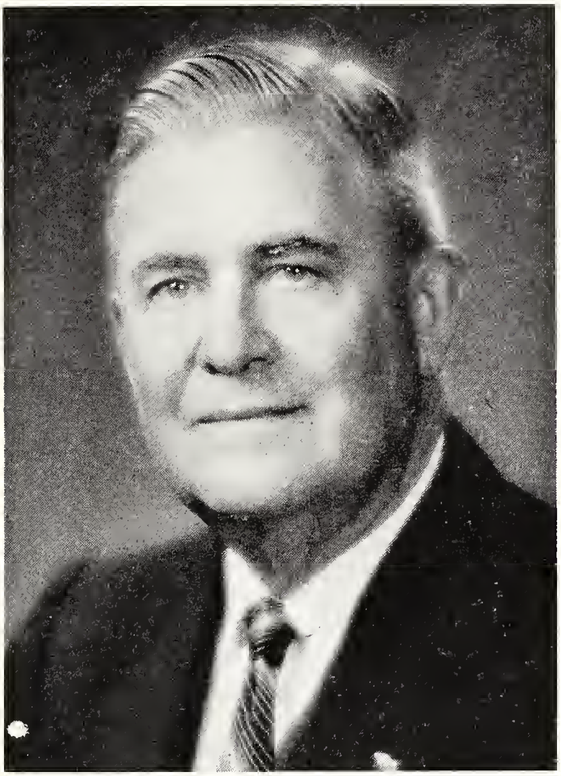
DOCTOR'S COMMUNITY PARTICIPATION

We are grateful to all the doctors who have written papers for the journal the past year. Our medical school has been most cooperative.

In the January issue of the *Mississippi Doctor* Dr. Verner S. Holmes had a very fine paper on, "The Doctor As a Citizen." It is an able article and very timely. There was a time when we thought that a doctor should not show much concern as a citizen and none at all as a politician. The American Medical Association for years favored this idea more or less. But not too many years ago it saw the role the doctor could play in good public relations by being an active citizen.

Dr. Holmes believes that the doctor should be active in every good cause in the community, in the service clubs, in the church and in bringing science and religion together for the strength of a people. We hope to hear from Doctor Holmes again.

DR. PATTERSON TO PRESIDE



C. W. Patterson, M.D., *Rosedale*

Presiding at the annual meeting of the Mid-South Postgraduate Medical Assembly, February 11-14, at the Hotel Peabody in Memphis, is the 1957-58 president, Dr. C. W. Patterson of Rosedale, Mississippi.

A regular attendant at the Mid-South meetings for years, Dr. Patterson has engaged in practice in the Delta since 1908, since his graduation from Tulane Medical School that year. He served an internship in the New York Nursery and Child's Hospital in New York, returning to Rosedale in 1916.

Dr. Patterson has been president of the Delta Medical Society twice, vice-president of Mississippi State Medical Association twice, and councilor six years. He was made a fellow in the American College of Cardiology in 1956. A member of the staff of Bolivar County Hospital, he is a Presbyterian, a Shriner, a Mason, and a Rotarian.

PAST-PRESIDENTS DINNER

As is the custom with the president of the Mid-South Postgraduate Medical Assembly, Dr. C. W. Patterson of Rosedale, Mississippi, will host the group of past-presidents for dinner the first night of the meeting in Memphis. The dinner will be held Tuesday evening, February 11, at the Peabody Hotel. Living past-presidents are:

ARKANSAS: Drs. F. L. Husbands, Blytheville; L. H. McDaniel, Tyronza; H. T. Smith, McGeehee; Hoyt Allen, Fay H. Jones, Little Rock; Joe Verser, Harrisburg; H. King Wade, Hot Springs.

MISSISSIPPI: Drs. W. H. Anderson, Booneville; John G. Archer, Frank Acree, Greenville; Larence W. Long, Jackson; V. B. Philpot, Memphis (formerly Houston); R. B. Caldwell, Baldwyn.

TENNESSEE: Drs. A. G. Hudson, Memphis; J. L. Dunavant, Ripley; Julian Price, Dyersburg; L. S. Nease, Newport; Luke Nabers, Morristown.

EXHIBITORS CONTRIBUTORS ALSO

We should not forget to visit the exhibitors at the Mid-South. The companies furnishing these displays not only pay a big part of the convention bill but they also contribute vastly to the onward march of medicine. They invest great sums in research and pass on to the profession and the public the value of these discoveries. New medicines stand or fall when tried out in practice, and no small responsibility rests upon the present-day doctor to maintain a fair acquaintance with modern pharmacopeia.

VETERAN OF MEDICAL MEETINGS

There was the time when Dr. J. A. Majors of Dallas never missed a meeting of the Mid-South Medical Assembly. A native of Mississippi, partly retired, he keeps fully alert to all professional interests and imparts the warmth of his generous spirit through the son and son-in-law who man the J. A. Majors booth. At this book booth you may obtain a copy of the little Matas masterpiece, *Soul of the Surgeon*. Dr. Majors and Dr. Matas were great friends.

NORTH CAROLINA OPENS CHILD PSYCHIATRIC CLINIC

The Department of Psychiatry of the University of North Carolina School of Medicine (Dr. George C. Ham, professor and chairman of the Department, and Dr. Lucie Jessner, professor and director of the Child Psychiatric Section) announces the opening on February 1, 1958, of a nine-bed child psychiatric inpatient service in the North Carolina Memorial Hospital for intensive diagnostic evaluation and short-term therapy of emotionally disturbed children under twelve years of age. Children may be referred as private or as staff patients from North Carolina and as private patients from other states.

Inquiries should be addressed to the Admissions Officer, Psychiatric Center, N. C. Memorial Hospital, Chapel Hill, North Carolina.

FIFTY-YEAR BIOGRAPHICA
LEON HAWKINS BREVARD

Leon Hawkins Brevard was born at Huntington, Tennessee, July 20, 1881.

He received his medical degree from the University of Tennessee, Memphis, Tennessee. After graduation, Doctor Brevard practiced at Eudora for ten years and then moved to Hernando. Later he practiced at Dundee before moving to Deeson.

Since 1948, Doctor Brevard has been serving as health officer. He has served in Lee, Quitman, Coahoma, Tunica, Tate-DeSoto and Sunflower counties.

On December 1, Doctor Brevard was honored with membership in the Fifty-Year Club at the eleven o'clock service in the First Presbyterian Church, Marks. Dr. W. H. Anderson, sponsor of the club, presented the certificate and pin.

Doctor Brevard continues to serve his fellowman faithfully and well in the field of public health in Quitman County.

DR. PIERCE

We deeply regret the passing of Dr. Daniel O. Pierce of Jonestown. Just a few weeks ago we delivered to him his fifty-year certificate and pin. The celebration, held at the Legion hut, seemed to have drawn the whole town. It was a fine testimony to his popularity, behind which have been years of devoted service to the people of his territory. His life radiated love, character, and integrity. Expressions of appreciation to him were free and genuine, to a citizen beloved. Our deepest sympathy to Mrs. Pierce and the people of Jonestown.

DR. MCKINNON

Another fifty-year doctor, Dr. W. L. McKinnon of Hattiesburg, died the past month. He has served well and long in this fine city. He was liberally honored by his fellow doctors and the people of his section, a man of great worth and contribution to his age.

INSTITUTE IN PSYCHIATRY AND NEUROLOGY

The tenth annual Institute in Psychiatry and Neurology which will be held at the Veterans Administration Hospital, North Little Rock, Arkansas, on February 27 and 28, 1958, will include the following participants: Dr. Franz Alexander, Dr. Daniel Blain, Dr. Walter Freeman, Dr. Edwin F. Gildea, Dr. and Mrs. Jacob L. Moreno, Dr. William Rottersman, Dr. Henry Schwartz, Dr. Harvey J. Tompkins, Dr. W. R. Alstadt, Mrs. Helen H. Perlman, Dr. Harry Solomon, Dr. Philip Thorek, and Dr. Fillmore H. Sanford.

This institute is being planned with the anniversary theme being stressed. Almost all of those who participated in the first annual Institute, which was held in 1949. will return for the occasion.

FIRST WORLD CONGRESS OF GASTROENTEROLOGY

The World Congress of Gastroenterology will meet in Washington, D. C., May 25-31, 1958, Sheraton-Park Hotel, followed by the American Gastroenterological Association, same place, May 30-31.

Over two hundred national and international scientists, physicians, surgeons, roentgenologists, and parasitologists will present the most recent clinical and investigative advances in gastroenterology at this first world congress to be held in the United States.

For information, write Dr. H. M. Pollard, University Hospital, Ann Arbor, Michigan.

INTERNATIONAL CONGRESS OF ALLERGOLOGY

The third International Congress on Allergology will meet in Paris, France, October 19-26, 1958

For information regarding the program, write Dr. Samuel H. Feinberg, 303 East Chicago Ave., Chicago, Illinois.

MEDICAL RESEARCH FOUNDATION ESTABLISHED FOR TAY-SACHS DISEASE AND ALLIED DISORDERS

A new non-profit foundation has been established to support and stimulate research, clinical, ous research. It is certain and sure chiropractic Gastroenterological Association, same place, May and educational programs in Tay-Sachs' disease and allied heredo-familial, neuro-degenerative diseases of infancy and childhood. The scope of the program will include, in addition to Tay-Sachs' disease, Niemann-Pick's disease, infanitle Gaucher's disease, Schilder's disease, diffuse sclerosis, amyotonia congenita, Friedreich's ataxia, and others. The foundation is known as National Tay-Tachs Association, Inc., New York Chapter, and is composed of parents who have had afflicted children, interested laymen, and medical personnel in the field.

The foundation's address is P. O. Box 1250, G. P. O., New York 1, N. Y.

Now let us take right off to the Mid-South at the Peabody in Memphis.

Deaths

DR. BOSWELL BURIED AT SANATORIUM

Dr. Henry Boswell was a "good steward," and "has made this world a better place in which to live," stated Rev. E. F. Hicks, pastor of Magee First Baptist Church, at Dr. Boswell's funeral held December 18, 1957.

Dr. Boswell, founder and for 40 years superintendent of Mississippi State Sanatorium, died only two weeks after his retirement. He was 73.

He was buried at the Sanatorium where he worked for the biggest part of his life.

Rev. Hicks said, "Dr. Boswell will live on through this great institution, through the people who knew him and worked with him through the Henry Boswell Society for ministry to patients at the Sanatorium, through the people whose health has been restored by his care and treatment."

Four other ministers assisted in the services. They were Rev. L. P. Anders, Sanatorium chaplain, Rev. J. O. Ware, retired chaplain, Rev. W. B. Hooker, pastor of Magee Presbyterian Church, and Rev. E. E. Samples, pastor of Magee Methodist Church.

A choral group from Piney Woods School sang.

Gov. J. P. Coleman and other friends from all over the state attended the services held in Sanatorium chapel.

Dr. Boswell was a past-president of the Mississippi State Medical Association, a fellow in the American College of Physicians, and superintendent of State (now renamed Boswell) Sanatorium since 1919.

DR. JOHN KITTRELL

Dr. John Kittrell, a practicing physician at Jena, La., for the past 30 years and former director of the Jones County health department, died in Laurel December 26.

The doctor's death followed a heart attack. He was 61. Dr. Kittrell, son of Dr. and Mrs. J. R. Kittrell, and his family were visiting in Laurel for the Christmas holidays.

He was a graduate of the University of Mississippi and Tulane University.

Survivors besides his widow and parents, include four daughters. They are Mrs. Otis Winnard of Bay St. Louis, Lt. Grace Kittrell of Billeville, Ill., and Misses Anne Moore and Madge Kittrell of Jena.

DR. H. L. McKINNON

Dr. Hugh L. McKinnon, Hattiesburg physician for more than 50 years and one of the state's first obstetrics specialists, died January 22 in Hattiesburg.

A native of Perry County, Dr. McKinnon was a graduate of the University of the South at Sewanee, Tennessee, and Memphis Hospital Medical College, now the University of Tennessee. He did postgraduate work at Johns Hopkins University and Tulane University.

Dr. McKinnon began his practice at Carriere in 1902 and moved to Hattiesburg in 1907.

He served on the State Board of Health from 1936 to 1942 and from 1947 to 1953. In 1953 he represented Mississippi at the first western hemisphere conference of the World Medical Association at Richmond, Virginia. There he spoke on advances seen in medicine during his 51 years' practice.

Dr. McKinnon was a member of the Fifty-Year Club, a past-president of the Forrest County Medical Society, the South Mississippi Medical Society, and a captain (MC) in World War I.

He was a member of the Presbyterian Church and a charter member of the Hattiesburg Kiwanis Club.

Survivors include his wife; one daughter, Mrs. Dubose A. Vann, Jr., of Baton Rouge, La.; a son, Dr. Joseph G. McKinnon, with whom he was associated in practice; five grandchildren; and a

BOONEVILLE NURSING HOME

The policy of this excellent nursing home is to meet the individual needs of the sick and aged, to give the best care to the sick, aged, and convalescent.

We are also prepared to care for surgical patients, invalids, and patients requiring special diet.

Pleasant surroundings — television — furnace heat — air-conditioning — picnic grounds.

BOONEVILLE NURSING HOME
OZELLE MULLINIX, Operator

PArk 8-5929 302 Bridge Street
Booneville, Mississippi

DOCTOR, VISIT OUR BOOTH . . . . .

J. A. MAJORS BOOK COMPANY

401 North Olive, Dallas 1, Texas
108 Edgewood Avenue, N.E., Atlanta 3, Ga.
1301 Tulane Avenue, New Orleans 12, La.

for the peak of analgesic efficiency

DILAUDID
brand of DIHYDROMORPHINONE

Dosage Forms of Dilaudid hydrochloride:
Ampules: 1 cc., 2 mg. and 3 mg. each.
Hypodermic Tablets: 2, 3 and 4 mg. each.
Oral Tablets: 2.7 mg. each.
Multiple Dose Vial: 10 cc., 2 mg. Dilaudid sulfate per cc.

*Subject to Federal narcotic regulations
Dilaudid®, E. Bilhuber, Inc.

KNOLL PHARMACEUTICAL COMPANY ORANGE NEW JERSEY

Your one-stop direct source for the
FINEST IN X-RAY
apparatus . . . service . . . supplies

DIRECT FACTORY BRANCHES

LITTLE ROCK
2424 Wright Ave. • FRanklin 4-0777

MEMPHIS
778 Madison Ave. • JAckson 5-0526

NEW ORLEANS
7715 Edinburgh St. • AUdubon 7742

RESIDENT REPRESENTATIVES

BATON ROUGE
C. A. EBERSBAKER, 2451 Honeysuckle Ave. • DIckens 2-2308

JACKSON
A. D. MAYO, 209 Conti St. • Phone 6-2318

High Cervical Cordotomy*

LYLE A. FRENCH, M.D.†

Minneapolis, Minn.

ORDOTOMY done in the high cervical region
can be used successfully to relieve severe
ctable pain occurring anywhere in the body
v the level of the fourth cervical dermatome.
anatomical basis for the operative procedure
at painful impulses that arise at naked nerve
nals throughout the skin, subcutaneous struc-
, muscles, bone and viscera are carried either
somatic nerve directly to the posterior root
lion (somatic afferent fibers) or 2) indirectly
mpathetic nerve trunks through the sympa-
c ganglia and then via the white rami com-
canti to the posterior root ganglia (visceral
ent fibers). The cell bodies of all sensory
es lie in the posterior root ganglia. The pain
s (the axons of the cells in the posterior root
lia) then enter the spinal cord through the
l division of the dorsal root and ascend a
distance (usually about 2 segments) in the
lateral tract of Lissauer to synapse in the
antia gelatinsoa Rolandi. Neurons of the sec-
order then cross through the ventral commis-
to the opposite side and gather as a fairly
pact discrete bundle of ascending fibers (the
l spinothalamic tract) in the anterolateral
on of the spinal cord. As the lateral spino-
mic tract ascends, fibers from each higher
ent are added to its ventromedial border. In
pper thoracic region this tract is fairly com-
but it is much more so in the higher cervical
ns. Because of the discreteness and com-
ness of this tract in the higher cervical re-
s, it is possible in this region to carry out
otomy with a high degree of certainty that
ction is obtained of all the pain fibers from
t the fourth cervical level caudad. Neither the
acter of the lesion, as long as it is of organic
n, nor the structure involved, alters the fact
these pain impulses can be interrupted ade-
ely by section of the spinothalamic tract in
high cervical region.

hart I lists the causes of pain in a series of
patients who have undergone cordotomy in
high cervical region.

CHART I

Disease	*Number of Cases*
Carcinoma Female Genito-urinary Tract	26
Carcinoma, Male Genito-urinary Tract	19
Carcinoma, Breast	17
Carcinoma, Gastro-intestinal Tract	17
Carcinoma, Lung	12
Carcinoma, Pancreas	7
Amputation Stump Pain	6
Tabes Dorsalis	5
Sarcoma, Hip Joint	2
Malignant Melanoma	4
Leukemia	1
Carcinoma, Primary Unknown	1
Neurofibroma, Sacral Plexus	1
Osteoarthritis, Spine	1
Chondrosarcoma, Pelvis	1
Chordoma	1
Total	121

TECHNIQUE OF CORDOTOMY

The procedure can be carried out either under local or general anesthesia. The patient is placed in a sitting position for unilateral cordotomy but if bilateral cordotomy is done, an horizontal position with the patient on his abdomen is used. The reason an horizontal position is used in patients undergoing a bilateral cordotomy is that severe hypotension may accompany the second incision, and if the patient is in an horizontal position this hypotension is much easier to control. If local anesthesia is used the level of sensory loss can be tested as one extends the incision into the cord. This may help to insure an adequate sensory level with "islands" of retained sensation, however, such testing really is not necessary after the surgeon has accustomed himself to the procedure at this level.

For a unilateral cordotomy a hemilaminectomy of the first and second vertical vertebrae is accomplished. The dura is opened and an incision into the cord at the second cervical level is made. The incision is approximately 5 mm. deep and it sections the anterolateral part of the cord, *i. e.*, the area anterior to the dentate ligament. If a bilateral cordotomy is done the only variation from the above is to do a laminectomy on the opposite side at the C_3 level and make a comparable incision into the cord. When the contralateral cord incision is made in the upper thoracic level the laminectomy is done of the T_1 - T_2 vertebrae.

---

rom the Division of Neurosurgery, Department
urgery, University of Minnesota Medical School,
neapolis 14, Minnesota.
resented at the Mid-South Medical Assembly,
aphis, Tennessee, on February 11, 1958.

RESULTS

Unilateral high cervical cord incisions were made in this series on 103 patients. In many instances this high cervical incision was part of a bilateral cordotomy with the second or contralateral incision being made in the lower cervical or upper thoracic level. In 96 patients the high cervical incision was made at either the C_1 or C_2 level. There were only 94 testable patients in this Two patients expired too soon after the operative procedure to make certain of their exact level of analgesia. In the remaining 101 patients the immediate analgesic level was at C_4 or higher in 95, and in 6 it was at C_5. In only 2 patients was it below C_6. Obviously in the latter two patients the cord incision was relatively inadequate. When these same patients were tested for level of analgesia three months or more after the operation, there was a persistence of the high level of analgesia at the C_4 level or above in 84 of the patients, in 7 it had dropped to C_6 or below that level. There were only 94 testable patients in this group because the others had expired prior to testing for this "late level." It is apparent that the level of analgesia following cordotomy done in the high cervical region is followed by a fairly persistent level of analgesia up to the fourth cervical level.

Bilateral cordotomy was done in the cervical region in 18 patients. The usual site was at the C_1 and C_3 levels although some were done at the C_1 and C_4 levels. Obviously these patients were those with severe intractable pain bilaterally in the upper chest or brachial plexus regions and generally were the most debilitated of all the patients encountered in this series. There were 6 operative deaths in this series of 18 patients. In five of the fatalities there was a bilateral level of analgesia established up to the fourth cervical segment bilaterally and in the sixth case up to the fourth cervical segment on one side and to the fifth thoracic segment on the other side. Nine patients survived bilateral high cervical cordotomy. Seven of the operations were one-stage and two were two-stage procedures. The highest level of analgesia obtained in these surviving patients was at the C_4 - T_1 level. The obvious conclusion is that bilateral high cervical cordotomy is fatal if the level of analgesia obtained is high enough to relieve bilateral upper thoracic and lower cervical pain. As stated above, it must be admitted that these patients were the most debilitated and cancer-riddled of the series, they were the ones who had extensive bilateral pain necessitating high levels of analgesia so that had they been in better general condition the theoretical possibility is present that they might have tolerated such a procedure.

Postoperative paresis of the ipsilateral extremities was observed in 13 cases. This disappeared in a matter of a few days in all but one case. In this instance while the weakness persisted, it was not severe and it was not disabling to the patient. Transitory paralysis of the ipsilateral diaphragmatic musculature occurred in almost all of the cases. This usually disappeared within twenty-four hours and has not caused serious pulmonary complications in any instance. An unusually capable staff of anaesthesiologists undoubtedly accounts for this good fortune. It has been observed that patients who exhibit this transitory paralysis of the respiratory muscles are more likely to obtain a high permanent level of analgesia without subsequent drops or "islands" of hypalgesia. Urinary retention was observed in 22 patients, 13 of whom had bilateral cordotomies. In 2 of the patients it was permanent, requiring continuous catheter drainage of the bladder. In the other 20 patients it disappeared entirely in a matter of a few days to three weeks. Both patients with permanent urinary retention had bilateral cordotomies with a level of analgesia established at C_5 - T_6 and C_4 - T_4 respectively. It should also be mentioned that this frequency of urinary complications is really higher than it appears because 53 of the 121 patients preoperatively had bowel and bladder involvement of a severe degree or had colostomies and/or ureterostomies so that the 22 patients mentioned above are really complications of a total of only 68 patients or a frequency of 33 per cent. However, it is also true that none of the patients with unilateral cordotomy had permanent urinary retention.

The operative mortality in this series of 121 patients was 10.8 per cent, most all of whom were lost during the early years after this procedure was instituted when attempts were being made to obtain bilateral high cervical levels of analgesia with a one-stage procedure. Since a two-stage procedure has been used when bilateral high cervical incisions are desired and since less debilitated, severely addicted, and desperately ill patients are being operated upon, the mortality rate has dropped to approximately 4 per cent.

CONCLUSIONS

Anterolateral cordotomy done in the high cervical region is a practical method of relieving severe and seemingly intractable pain occurring below the fourth cervical level.

The Ever-Increasing Problem of Vertigo*

SHED HILL CAFFEY, M.D.
Philadelphia, Miss.

As a general practitioner, I have been greatly impressed by the fact that practically every day I have encountered a patient who comes in and tells me that he has had an attack of dizziness. In fact, it has become so prevalent among otherwise healthy individuals that I have developed an acute awareness of this problem and feeling of insecurity. For certainly, vertigo is a terrifying symptom to the average patient and gives him a frightened, disoriented complex which makes him feel that his sense of security in the world has been threatened. An attack of sudden vertigo will so quickly separate him from his normal environment that he feels confused, bewildered and completely helpless.

Vertigo, or dizziness, implies the presence of a sense of motion, either of the patient or his surroundings. I do not wish in this paper to make a fine distinction between the terms "vertigo" and "dizziness." Rather I would place them together as having the same general meaning for the purposes of discussion of this subject. Vertigo itself is a subjective symptom, and is measurable but with questionable accuracy. First and foremost, it must be recognized as a symptom and not as a disease, and that it is a symptom which is prone to recur often in association with a disease or symptom-complex. Because of the number of symptoms involved and the multiplicity of causes, the diagnosis and treatment of patients who complain of dizziness furnish a prime example of the necessity of regarding the patient as a total human being. The most frequent reason for difficulty in diagnosis is the failure to allow enough time for thorough investigation. The most frequent reason for failure to relieve his symptoms is the rather general practice of treating the complaint without first determining its cause.

Recently I saw an elderly patient in my office who had been bothered with attacks of dizziness for several months. She had been living in another state and had been treated for essential hypertension as the cause of her dizziness. Inspection of her ear canals revealed a greyish looking object packed down next to her left ear drum with a large amount of wax. The patient was completely relieved of her dizziness when I removed a large candle fly from her left ear, and to my knowledge she has not been dizzy since that day.

There are two types of vertigo: 1) Physiological vertigo is caused by normal reactions to movement of the body or its environment; 2) pathological vertigo is an illusion or false sensation of movement of the body or its environment. For example, sudden blockage of the Eustachian tube from barometric changes during flying or diving may cause physiological vertigo. Caloric change, loud sound stimulation, emotional episodes, and vasomotor instability, by upsetting the autonomic balance may cause a "physiological" type of vertigo. Pathological vertigo, however, stems from lesions in one of three major systems: 1) aural, 2) ocular and 3) proprioceptive.

In performing a routine examination in our office, I am sure that each of us asks the patient to stand erectly with his feet together and close his eyes in order to detect any swaying of motion or falling. This, of course, is the familiar Rombert test, and for the patient to be able to perform this test correctly, at least two of the systems named must be functioning. If not, the patient is an ambulatory cripple. For example, the blind man with normal labyrinth and intact skin, joint and deep muscle sense has no trouble and the tabetic person with normal eyes and labyrinth has no disturbance of equilibrium. The patient with dead labyrinths, but with good vision and normal joint and deep muscle sensation does very well after compensation for the loss of labyrinthine function has been established. But the blind person who develops tabes, or whose labyrinths are nonfunctioning will have trouble maintaining his balance, as will the tabetic person who tries to walk in the dark or the person with dead labyrinths who develops blindness or tabes.

The labyrinth is composed of two major parts that have a direct effect on motion sensation: 1) kinetic portion, which is controlled by the semicular canals, and impart to the patient a sensation of turning; 2) statis portion, which is affected by the saccule and the utricle, and convey a sensation of a change of one's position in space. There is never a sense of true turning unless the ear and its intracranial connections are involved. If the labyrinth or some other portion of the ear is the cause of vertigo, the lesion is spoken of as being peripheral in origin. If there is an associated hearing loss the dizziness is more than likely peripheral, and a hearing test is especially important in the proper examination of the patient.

---

*Presented before the Section on Medicine at the eighty-eighth annual session of the Mississippi State May 14-16, 1957.

Various clinical investigators disagree on the incidence of lesions of the labyrinth as the cause of vertigo: Spillane states that, "in practice, nearly 90 per cent of the cases of vertigo are due to labyrinthine lesions." Woodward made an interesting analysis of 9000 consecutive cases of all types seen in his office practice between 1946-1955. Included in the 9000 cases were 639 cases in which dizziness was a symptom. Dizziness constituted 7.10 percent of the total number of office cases. Dizziness was the only complaint in 69 cases; in 106 cases, dizziness was the primary complaint but was associated with some other symptom; 464 cases, dizziness was a secondary symptom. In only 55 of the 639 cases was a single possible cause for dizziness found. Woodward found 98 separate causes for dizziness in the 639 cases. He found 29 percent of the cases of vertigo to be caused by diseases of the labyrinth and ear.

Motion sickness itself is not generally regarded as a pathological type of vertigo. However, it is due to an overstimulation of the labyrinths, whether this is caused by an ocean voyage, an air flight or riding on a roller coaster. This reaction is more violent in a person with hypersensitive labyrinths, of course, and there is thought to be a strong psychogenic element involved.

Nausea and vomiting occur quite frequently with dizziness when these attacks of vertigo are due to ear disease. Hoople explains the probable cause for the associated symptoms: In the brain stem the centers for the labyrinthine function and vagus nerve are adjacent. A strong stimulus from the ear may cause impulses to "spill over" to the neighboring vagus nuclei and cause nausea—if this is very strong, it may produce vomiting.

In a case of skull fracture or severe infection, which may cause a total loss of one labyrinth, and the other ear remains completely normal, because this represents the greatest difference between the two ears, the resulting dizziness will be the most severe that one can suffer. However, an individual can adjust over a period of years and a sense of equilibrium is gradually reached. A young child can acquire it in weeks; an elderly person will not become stable much short of a year.

Drugs may precipitate an attack of aural vertigo: idiosyncrasies to quinine, tobacco, salicylates, streptomycin, sulfonamides, arsenic, salvarsan, barbiturates, morphine, mercury, gold and alcohol. These have a toxic effect on the end-organ, spiral ganglion nuclei and nerve fibers of the vestibular nerve. This may be due to arteriole and capillary wall damage, or indirectly because of reflex dilation or contraction of the vessels, thus changing the permeability of the vascular walls and interfering with nutrition, oxygen supply and endolymphatic pressure.

Meniere's Disease must constitute an important part in the discussion of vertigo, although I have found only one or two cases in my practice which I felt were definitely proven cases of Meniere's. I emphasize this point and wish to elaborate further on the symptomatology and diagnosis of this disease, because I believe it to be a "catch-all" for a number of cases of vertigo actually caused by systemic and cardiovascular disease. The essential features of the diagnosis of Meniere's are paroxysmal attacks of true whirling vertigo, sudden in onset, associated with tinnitus and with progressive perceptive deafness, both of which are usually present for a considerable period of time before the episodes of whirling vertigo occur. The triad may also be called Meniere's symptom complex or endolymphatic hydrops. When one or two of the triad are absent, the term "pseudo-Meniere's" is used.

In Woodward's series of 639 cases of dizziness, he found only 24 true cases of Meniere's. McNally and Stuart, at London in 1949, presented 200 cases of vertigo, ranging from ages 10 to 79 years, but later they made an additional five year review of these cases in 1955. In 1949, 78 out of the 200 cases of vertigo had been classified as true Meniere's. After the review five years later, in an effort to ascertain what had been the medical course of each patient, 24 of the cases were reclassified:

3 changed to hypertension.
2 to cerebrovascular disease.
1 to otosclerosis.
2 to psychosomatic.
8 to atypical Meniere's.
8 to toxic labyrinthitis.

It is important to remember that there are no changes in the drum or middle ear at any stage of Meniere's disease. This point helps to differentiate Meniere's disease from other diseases of the ear as the primary cause of attacks of vertigo. Simple obstruction of the Eustachian tube or allergic reactions in the nasopharynx may cause vertigo; serous otitis is a frequent cause also. Even external otitis with secondary swelling of the ear canal and local reaction on the drum may produce an attack of vertigo.

In my practice I have been impressed by the number of patients who have refractive errors of vision which appeared to contribute to their dizziness. Ophthalmological consultation in many patients complaining of dizziness sometimes reveals diabetic retinitis, retinal arteriosclerosis, glaucoma or retinal detachment. Diplopia may be the presenting symptom, along with attacks of vertigo.

From my own personal observations I would state that by far the greatest number of cases of vertigo are related directly to diseases of the central nervous system, or from general systemic diseases and disorders. After the age of sixty, many patients undergo degenerative changes of the brain, and the end-result is a general decrease in the cerebral circulation. Three types of conditions occur in the brain which may cause sudden attacks of vertigo. Alvarez in a recent article, stresses the importance "of little strokes", caused by occlusions of the small arteries which may take the form of dizziness attacks. Others feel that these are only cerebral vasospasms, while the third interpretation of such transient cerebral symptoms emphasize the significance of hypotension caused by stenosis of the vascular tree. Denny-Brown believes that it is often caused by stenosis of either the internal carotid or the basilar artery which causes hypotension. Thus you can see the stenosis of a major cerebral vessel, with associated hypotension may precipitate an attack of vertigo, especially when these attacks occur early in the morning after the patient has rested and is getting out of bed. In an elderly patient with acute vertigo, thrombosis of the posterior inferior cerebral artery must be considered.

Besides cerebral arteriosclerosis and its subsequent vascular accidents there are many brain lesions which may produce vertigo. Among the brain tumors are cerebellopontine angle tumors, (acoustic neuroma, meningiomas), supratentorial tumors and tumors of the midbrain. Disseminated sclerosis, syringobulbia, syringomyelia, tabes, encephalitis and syphilis are to be considered, as is pressure transmitted from any other space-occupying lesion, abscess, tumor, hydrocephalus, or a generalized increase in intracranial pressure.

General systemic disease and metabolic disorders so frequently cause vertigo or have dizziness as one of their presenting symptoms that it is difficult to present a completely comprehensive list of causes. Besides those previously mentioned there are menopausal disturbances, acute infectious diseases, or post-infectious states during which time the body has not fully recovered from a severe toxemia. Nephritis, diabetes, pernicious anemia, gastro-intestinal disturbances, leukemia, hypothyroidism, allergy and anaphylactic shock may all cause vestibular imbalance. It is important to consider the hyperactive carotid sinus reflex, paroxysmal auricular fibrillation, Stokes-Adams syndrome with heart block and postural hypotension. The latter condition necessitates the extreme importance of making blood pressure recordings of the patient in the erect and recumbent position.

In the housewife with asthenia, headache and dizziness it is wise to think of chronic carbon monoxide poisoning. Emotional imbalance in an individual from whatever cause may impart a sensation of dizziness, and it must not be overlooked in establishing a diagnosis.

Vertigo may be called "idiopathic", only after all attempts to establish a diagnosis have failed to bring the final answer. We are still faced with the perennial problem, "what can we do for this dizzy patient?". Several medical means of controlling vertigo are rational, though empirical and I feel that most of us have to utilize every possible approach in relieving the patient's symptoms:

1. Dramamine and Bonamine—of value in some patients, but more spectacular in motion sickness.
2. Histamine desensitization—this method of treatment has generally lost favor.
3. Nicotinic acid—if used parenterally and orally in large doses, is occasionally effective. It acts to improve the blood supply of the labyrinth.
4. Antihistaminic drugs—in cases where there is reason to suspect that vertigo is on an allergic basis.
5. Pyridoxine—in large (50 mgm.) doses. Mechanism unknown.
6. B Complex vitamins in large doses intravenously—if given to those patients where deficiency states are suspected.
7. Allergic control—elimination of offending allergens in diet and desensitization; in appropriate instances, it is successful.
8. Low salt and low fluid intake are sometimes helpful.

REFERENCES

1. Fowler, Edmund Prince: J.A.M.A. Archives of Otolaryngology. Volume 64, Number 3, Page 196, September 1956.
2. Woodward, John F.: J.A.M.A. Archives of Otolaryngology. Volume 64, Number 6, Page 509, December 1956.
3. Kos, C. M.: Auditory function as related to the complaint of dizziness. The Laryngoscope. Volume LXV, Page 711, August 1955.
4. Lederer, Francis, and Hollender, Abraham R.: Basic Otolaryngology. Fourth Edition, 1956.
5. Lewy, Robert B.: A Critical Evaluation of Medical and Surgical Therapy in Meniere's

Disease. American Practitioner and Digest of Treatment. Page 534, 1953.

6. McNally, W. J., and Stuart, E. A.: An additional five year review of some cases of vertigo reported in 1949. Annals of Otology, Phinology and Laryngology. Volume LXIV, Page 519, June 1955.
7. Spillane, John D.: Sudden Giddiness. British Medical Journal. Page 612, September 3, 1955.
8. Atkinson, Miles: Meniere's Syndrome; Further observation of vitamin deficiency as causative factor. J.A.M.A. Archives of Otolaryngology. Page 127, July-December 1953.
9. Hoople, Gordon D.: Why Is Your Patient Dizzy? New York State Journal of Medicine. Volume 55, Number 15, Page 2161-2167, August 1, 1955.
10. Charles, Cecil M.: Dizziness and Vertigo. Geriatrics, Volume 11, Number 3, Page 111, March 1956.
11. Costen, James B.: Diagnosis of Aural Vertigo. Missouri Medicine. Volume 53, Number 8, Page 69, August 1956.
12. Mosley, Vince: Vertigo and Dizziness from the viewpoint of the Internist. Journal of the South Carolina Medical Association. Volume 50, Number 4, Page 95, April 1954.
13. Kunkle, Charles E.: Central Causes of Vertigo. Journal of the South Carolina Medical Association. Volume 50, Number 6, June 1954.
14. Orma, E. J. and Koskenoja, M.: Attacks of Dizziness in the Elderly Patient. Geriatrics, Volume 12, Number 2, Page 92, February 1957.
15. Conner, Charles E.: Vertigo. Fundamentals of Otolaryngology, by Lawrence R. Boies. Second Edition, Page 111-127, 1954.

Transduodenal Division of the Sphincter of Oddi[*]

G. H. MARTIN, M.D.
F. J. MORGAN, JR., M.D.[†]
Vicksburg, Miss.

Since 1948, we have performed transduodenal choledochal sphincterotomy in 28 patients. This paper is an attempt to evaluate the results and to emphasize, at least in our hands, the danger of the procedure.

HISTORY

McBurney in 1898, is reported to have been the first to sever the sphincter of Oddi transduodenally to remove impacted stones. Archibald in 1913, suggested division of the sphincter for pancreatitis. Doubilet and Mulholland[2] have written extensively on the use of sphincterotomy for chronic and recurrent pancreatitis, and in 1948, reported a series of 21 cases, 9 of which were done by the transduodenal route. Mahorner[3] in 1949, reported 16 cases of obstruction in the lower end of the common duct caused by stones in 11 cases and stenosis of the ampulla in 4 cases. He advocated duodenotomy in any patient in whom the patency of the ampulla could not be demonstrated by exploration of the common duct. In 1955, Mahorner[4] reported the results of transduodenal choledochal ampulotomy in 30 operations. He reported the results as good in 90 per cent.

INDICATIONS FOR SPHINCTEROTOMY

In general it can be stated that in any instance in which a Bakes dilator cannot be satisfactorily passed into the duodenum through the sphincter of Oddi, the duodenum should be opened and the sphincter dilated or cut under direct vision. Specifically we have done transduodenal sphincterotomy in the following instances:

1. Stricture of Sphincter Alone	16	(57.1%)
1) with impacted stones	16	(57.1%)
2) with recurrent pancreatitis	8	(28.6%)
3 with impacted stones and pancreatitis	1	(3.6%)
	28	

TECHNIQUE

In this series of cases, the common duct exploration was carried out either by making an opening in the common duct or by exploring the common duct through a dilated cystic duct. A 3 mm. Bakes dilator was passed through the common duct to the sphincter. If there was any question as to the tip of the probe passing freely into the duodenum, transduodenal visualization of the ampulla of Vater was undertaken. The peritoneum along the superior and lateral border of the duodenum was divided and the duodenum rotated toward the midline. A short transverse incision was made in the duodenal wall overlying the site of tenting of the duodenum by the dilator. This incision need only be long enough to visualize the tip of the probe which usually can be seen presenting through the ampulla of Vater. Under direct vision, the sphincter was cut and the probe pulled through the ampulla of Vater and out through the duodenum. The handle of the probe usually impinged in the duodenal opening of the duct, and an incision was made through the sphincter of Oddi using the handle of the probe as a guide. A long limb T tube was then pulled through the ampulla and allowed to lie well down the distal portion of the duodenum. The incision of the duodenum was then closed by a Connell suture followed by interrupted cotton sutures in the serosa of the duodenum. The common duct was closed about the vertical limb of the T tube.

[†] From the Surgical Section of the Street Clinic and Mercy Hospital-Street Memorial, Vicksburg, Miss.

RESULTS

In the nine-year period from 1948, through 1956, 28 cases of transduodenal choledochal sphincterotomy have been done at Mercy Hospital-Street Memorial. All patients were females except 4, and all patients were white except for 1 colored female. The ages of the patients ranged from 23 to 77 years, the average age being 53.4. The average stay in the hospital following surgery was 15.4 days. The number of days the T tube stayed in place ranged from 9 to 61, the average being 29 days.

Of the 28 cases reported, the results in 19 were good and fair in 3, giving 22 cases with good or fair results (78.6 per cent). There were 2 poor results and 4 deaths, totaling 6 patients or 21.4 per cent with poor results. Of the 4 cases that died, one patient expired four and one-half months after operation from a cerebral hemorrhage which apparently was not related to the operation. Three other cases expired in the immediate postoperative period and will be discussed in detail. Excluding the death occurring four and a half months after surgery, the immediate operative mortality was 10.7 per cent.

DISCUSSION OF POSTOPERATIVE DEATHS

Case No. 1, 43-year-old white female, admitted December 1, 1951, with complaint of sudden onset of right upper quadrant and epigastric pain of 12 hours' duration. The patient was critically ill on admission. There was no evidence of jaundice. There was marked tenderness in the entire right upper abdominal region, but no rigidity was present. The admitting laboratory work was essentially negative except for a leukocytosis of 17,000. The serum amylase determination, on admission, was reported as 40 mg. per cent.

A diagnosis of acute cholecystitis was made and exploratory laparotomy was done four hours after admission. At operation, the patient was found to have acute hemorrhagic pancreatitis with necrosis and edema of the head of the pancreas. The gallbladder contained a large solitary stone. An attempt was made to pass a probe through the common duct to the duodenum, but this was unsuccessful due to the obstruction at the ampulla. A transduodenal approach was made to the ampulla of Vater, which was markedly edematous and plugged with biliary mud. The sphincter was cut, and a long limb T tube was pulled through the sphincter.

The patient developed profound shock 24 hours later with chills and hyperpyrexia. Accompanying this was nuchal rigidity and right hemiplegia. On the fifteenth postoperative day, the patient had a profuse hemorrhage from the stab wound drain in the left abdomen and expired in shock. Postmortem examination revealed the pancreas to be almost completely necrotic from severe hemorrhagic pancreatitis. There was fat necrosis of the omentum and adjacent mesentery. There was also fat necrosis of the retroperitoneal space including the kidney cortex. The final pathological diagnosis was acute hemorrhagic pancreatitis.

Case No. 2, 61-year-old white female, was admitted to the hospital on December 3, 1954, with a history of gallbladder colic of two months' duration. X-ray examination showed a persistent shadow in the gallbladder wall more suggestive of growth than a stone. The gallbladder functioned normally. Operation was carried out because of a suspected tumor of the gallbladder.

At operation, adhesions of the gallbladder were found, but there was no growth in the gallbladder wall. The common duct was dilated, and there was thickening of the head of the pancreas. Attempts at passing a probe through the common duct were unsuccessful and the duodenum opened. The ampulla was divided and a long limb T tube inserted into the common duct.

The patient did fairly well until the fifteenth postoperative day when she developed a massive hemorrhage from the upper GI tract with bleeding through the T tube and through the gastric suction. She expired on the twenty-fifth postoperative day. An attempt to obtain an autopsy was unsuccessful, but it was surmised that this patient had an acute pancreatitis with massive hemorrhage.

Case No. 3, 54-year-old white female, admitted October 9, 1956. In 1950, this patient had had a cholecystectomy and choledochostomy done elsewhere. The common duct was drained for several weeks. Since that time she had had recurrent attacks of abdominal cramping pain and soreness. Intravenous cholangiogram revealed a dilated common duct with an apparent obstruction at the distal end. There had been no clinical jaundice.

Operation on October 10, 1956, revealed a dilated common duct from which three stones were removed. A 3 mm. probe could not be passed into the duodenum. The duodenum was then opened. The sphincter of Oddi was cut and a long limb T tube inserted. The patient recovered and was discharged on October 20, 1956.

She was readmitted on October 30, 1956, because of fever and drainage of pus around the T tube. The fever and tenderness subsided on antibiotics, and she was discharged from the hospital November 3, 1956.

The patient was readmitted to the hospital on November 15, 1956, because of fever and purulent drainage from the site of the T tube. On November 16, the wound was explored, and the T tube was removed. An abscess in the region of the porta hepatis was drained. This proved to be a duodenal fistula with copious drainage of bile and pancreatic juice. Stump drainage was established. On November 23, a Witzel jejunostomy was done for feeding purposes. Because of x-ray evidence of obstruction to the second portion of the duodenum, an anterior gastrojejunostomy was done on December 24, 1956. Exploration of the pyloric end of the stomach and duodenum through the gastrostomy incision revealed a patent pylorus, but with a duodenal fistula measuring a half inch in diameter located in the anterior wall of the first portion of the duodenum. Apparently the obstruction was in the second or third portion of the duodenum and was due to an inflammatory reaction.

In spite of all supportive measures, the patient continued to decline, developed a fecal fistula, and expired on January 1, 1957. Examination at autopsy revealed a duodenal fistula, a subhepatic abscess, and a fecal fistula of the transverse colon.

DISCUSSION

The postoperative mortality rate of 10.7 per cent has been most distressing. A review of the literature reveals that Mahorner[5] has performed transduodenal ampulotomy 42 times with no postoperative death. Major and Ottenheimer[6] reported 23 cases of transduodenal sphincterotomy with no deaths. Conversely, Clalherwick and Pattison[1] reported three cases of fatal acute pancreatitis following transduodenal sphincterotomy. There are probably many other postoperative deaths which have occurred but have not been reported in the literature.

During the same nine-year period, from 1948, through 1956, there was done at Mercy Hospital 319 operations on the extrahepatic biliary system. These operations were done for benign acquired diseases. Congenital, malignant, and traumatic cases were not included. Of these 319 operations, transduodenal sphincterotomy was done in 28 (8.8 per cent), and a supraduodenal operation (in which the duodenum was not opened) in 291 cases (91.2 per cent). The mortality rate in the 291 supra-duodenal operations was 0.78 per cent (2 deaths). The postoperative mortality in the transduodenal sphincterotomy cases was 10.71 per cent (3 deaths). These operations were all done by the same group of surgeons at the same institution, and though the series is small, it tends to emphasize the danger of transduodenal sphincterotomy.

SUMMARY

In the nine-year period from 1948, through 1956, we have performed transduodenal sphincterotomy 28 times with a distressing postoperative mortality rate of 10.7 per cent. Transduodenal choledochal sphincterotomy is a well established and accepted procedure where there is a chronic pancreatitis, stricture of the sphincter of Oddi, or impacted stones in the ampulla. In general, the results following this operation are good, but the procedure is not without danger. The mortality rate in this series is unfortunate, but transduodenal sphincterotomy remains a valuable procedure where the proper indications are present.

REFERENCES

1. Blalherwick, Norman H. and Pattison, A. C.: Acute Pancreatitis Complicating Choledochal Sphincterotomy. Am. J. Surg., 88:129, 1954.
2. Doubilet, H. and Mulholland, J. H.: Surgical Treatment of Recurrent Acute Pancreatitis by Endocholedochal Sphincterotomy. Surg., Gynec. and Obst., 86:295, 1948.
3. Mahorner, H.: Combined Supra and Transduodenal Explanation of the Common Bile Duct. Am. Surg., 129:766, 1949.
4. Mahorner, H. and Browne, E. R.: Results Following Transduodenal Choledochoampulotomy. Am. Surg., 140:607, 1955.
5. Mahorner, H.: Surgery of Biliary Tract. J. of La. Med. Soc., 108:75, 1956.
6. Major, James and Ottenheimer, E. J.: Transduodenal Sphincterotomy for Chronic Relapsing Pancreatitis. N. Eng. J. of Med., 248:130, 1953.

PAN-AMERICAN MEDICAL WOMEN'S ALLIANCE

Sixth Congress

Time: April 14 - 17, 1958

Place: McAllister Hotel, Miami, Florida

A choice of post-Congress trips are being planned, one to Washington, D. C. during the time of the Second Pan American Musical Festival, April 18, 19, 20, and the other a Caribbean Cruise for several days.

All women doctors are invited and we are expecting women to attend the Congress not only from the United States and Canada but also from Mexico and the Latin American Countries.

PURPOSE OF THE ALLIANCE

The purpose of this Alliance is to bring the medical women of North, South, and Central America, and the Caribbean area into an association with each other for mutual improvement, encouragement for their participation in all branches of medical public welfare; for the exchange of ideas and of improved treatment to facilitate social and cooperative relations; to assist in the further education of its members through exchange fellowships and loans; and to generally forward such constructive movements as may be mutually beneficial and/or properly endorsed by the medical associations for our several countries. (Constitution, Article II) Address inquiries to: Dr. Ethel John Wood, Chairman, 3678 Willowcrest, North Hollywood, California.

Third Trimester Bleeding

J. P. McLAURIN, JR.
Oxford, Miss.

Bleeding in the last three months of pregnancy is a recurring problem for any physician practicing obstetrics. Hemorrhage continues to be one of the three leading causes of maternal mortality. Although fatal hemorrhage is most likely to be an intra-partum or post-partum affair, I feel that bleeding occurring prior to the onset of labor is worthy of consideration.

Rather than having a discussion limited to placenta praevia and abruptio placenta, I should like to approach this problem from the clinical aspect of the patient who is bleeding and to follow through with the various diagnoses to be considered and the management in order to arrive at a diagnosis and to effect safe delivery for both mother and infant.

Etiology

First, mention must be made of the various possible causes of bleeding. These will be noted on the chart as grouped into extrauterine and intrauterine sources. Extrauterine sources are considered to be the cervix, the vagina, and the urethra. These of course are most frequently the cause of minor bleeding both in nature of quantity and of serious consequence; however, it is essential that they be considered in any woman bleeding in the third trimester. Included in the intrauterine sources are those major causes of third trimester bleeding which for many years have been recognized as a serious threat in any obstetrical practice—placenta praevia and abruptio placenta—as well as circumvallate placenta, rupture of the marginal sinus, and rupture of vasa praevia.

Immediately it is evident that some sort of definition of the term bleeding must be accepted as a basis for discussion. Are we to consider spotting and bloody vaginal discharge along with bleeding of several hundred cubic centimeters? I feel there is wisdom in dividing our patients into two groups on the basis of quantity of blood loss: a) those patients with spotting or bloody vaginal discharge which may or may not be enough to require a perineal pad, and b) those patients with bleeding of an estimated 200 cc. blood loss or more.

Minimal Bleeding

This type of division clearly draws a line between the extrauterine and the intrauterine sources of bleeding. With the exception of a ruptured varix, the extrauterine causes of bleeding rarely produce as much as 200 cc. blood loss. Also in this group the employment of one simple act of management will most frequently establish the location of the source of bleeding—this is careful and gentle vaginal inspection. There is no necessity for introduction into the vagina of anything more than a sterile speculum. If the source of spotting is not evident, there is no indication for or help to be obtained from bimanual examination. Actually failure to establish an extrauterine source of bleeding should lead to consideration of the patient along with the group which has experienced as much as 200 cc. blood loss.

Significant Bleeding

The patient who has a significant amount of bleeding—200 cc. or greater—is most likely to fall within the group bleeding from intrauterine sources. These sources are chiefly divided between abnormal location of the placenta and premature separation of the normally implanted placenta. Fish and his associates feel very strongly that rupture of the marginal sinus occurs with a frequency equalling that of placenta praevia. In discussing incidence of late pregnancy bleeding, Fish[1] states that, "one-third will be found to have placenta praevia, including low implantation, and an equal number, or more, will be found to have bled from rupture of the marginal sinus with evidence of normal placental implantation." He assigns placenta praevia an incidence of one in 64 deliveries, rupture of the marginal sinus an equal frequency, and abruptio placenta an incidence of one in 145 deliveries. Others report frequencies that vary considerably as will be seen in the charts.

Circumvallate placenta appears with much less frequency. Paalman and Vander Veer[2] report a series of 41 cases occurring in 8562 deliveries, a frequency of one in 208. Of these 41 cases, 51 per cent had bleeding that was brought to the attention of the physician; however, many of the episodes of bleeding occurred prior to the third trimester.

Vasa praevia with an umbilical vessel traversing the membranes overlying or near the cervix is a

---

*Presented before the Section on Obstetrics and Gynecology at the eighty-eighth annual session of the Mississippi Statee Medical Association, Biloxi, Mississippi, May 14-16, 1957.

very unusual situation; however, when one of these vessels ruptures there is a blood loss of 200 cc. or more with fetal death from exsanguination unless there is prompt recognition of the problem and immediate delivery by whatever means is feasible. As noted by Torry[3] a "high index of suspicion' is essential to diagnosis of vasa praevia early enough to salvage the infant.

Premature separation of the placenta or abruptio placenta characteristically presents a picture of pain along with vaginal bleeding, although of course the hemorrhage may be totally concealed. When there is bleeding present, it is usually dark in color and frequently there may be clots. There is uterine or abdominal pain which is most often constant. Examination of the abdomen reveals the uterus is tender and tense, either in a localized area or possibly generally, depending on the severity of the abruption. There may be contractions of labor present, but the uterus does not relax completely. These patients not infrequently will appear in a state of shock with the initial episode of bleeding, the degree of shock often being out of proportion to the hemorrhage.

The relationship of abruptio placenta to toxemia and chronic vascular disease, although not completely understood, is a well established fact. Hence diagnosis will often be aided by blood pressure determination, urine examination, and ophthalmoscopic examination of the ocular fundus. Some observers feel that toxemia is a constant and necessary part of the picture of abruptio.

There is no expectant treatment for the patient with abruptio placenta. It should be considered a progressive disease leading to fetal death and constituting a very serious threat to the mother's life. The fetus dies as a direct result of the placental separation depending on the degree of separation. The threats to the mother include shock, disseminated fibrin embolism, in vivo defibrination, ischemia of the renal cortex with varying degrees of necrosis, and activation of a fibrinolytic system in the plasma[4]. There is increased danger of appearance of shock, afibrinogenemia, and anuria with delay in delivery of the patient with abruptio placenta. Hence, in the interest of both parties prompt interruption of the pregnancy is desirable.

In this situation as in all others in medicine, there is wisdom in individualizing the treatment for each patient. Neither cesarean section nor vaginal delivery is the answer to every problem with abruptio placenta. In the patient with a soft, effaced, and partially dilated cervix, rupture of the membranes should result in prompt delivery from below. However, when the cervix is closed and firm, when the uterus is increasing in size from concealed hemorrhage, and when there may be delay in vaginal delivery, there should be no hesitancy to resort to cesarean section for delivery.

In these patients as any other who is bleeding, immediate replacement of the estimated blood loss is extremely important. It is also necessary to remember in the management of these patients with placental separation that theirs is a severe and often fulminating type of toxemia which must be very closely supervised both before and after delivery.

The classic picture of placenta praevia is the patient near term with painless vaginal bleeding. Usually the blood lost with placenta praevia is bright red because there is little or no delay in its reaching the vagina. Very frequently it will be manifest as a gush of blood, and there will be no continued bleeding when the patient is seen by the physician. The uterus is soft unless there are contractions of labor present, and even then it relaxes well between contractions. If this episode is the initial hemorrhage, shock is a rare occurrence; however, shock may appear with subsequent episodes of bleeding, especially if there is inadequate blood replacement. There is usually no fetal embarrassment with the initial hemorrhage from placenta praevia; however, this will vary with the location of the placenta, its degree of separation, and the degree of maternal distress from blood loss. The only recognized predisposing cause is multiparity or a rapid succession of pregnancies.

X-ray examination may be utilized in an effort definitely to localize the placenta. Dippel and Brown[5] demonstrated in 1940 the value of obtaining lateral films in an effort to locate the placenta. They reported localization of some 90 per cent of placentas by this one technique. The great majority of placentas will be found attached to anterior or posterior walls of the uterus with this technique, and of course finding the placenta in the fundus eliminates placenta praevia as a source of bleeding. When there is either failure of visualization or suggestion of a low implantation of the placenta, an A-P film with the bladder filled with air or other contrast medium will show findings suggestive of a placenta intervening between the fetal head and the bladder shadow, and a high fetal head displaced from the midline with over one centimeter of distance between it and the superior surface of the bladder.

Examination of patient with placenta praevia reveals a soft uterus, unless it may be felt during a contraction, and a non-tender uterus. In this examination of the abdomen it is essential to obtain information as to position of the fetus and some estimate of location of the presenting part. Naturally if the fetal head is engaged and fixed in the pelvis, there is little or no likelihood of discovering placenta below or alongside the fetal head.

In recent years the expectant management of placenta praevia has shown that there is no urgency for vigorous vaginal examination when the first episode of bleeding may occur prior to 36 weeks. Assuming that the other diagnostic efforts have failed to confirm or deny the presence of a low-lying placenta and that the blood loss is neither massive nor continuing, there is no harm in allowing the patient an opportunity to carry her pregnancy for a long enough time to have an infant capable of surviving. This is to be allowed only under certain circumstances. The patient must be willing and able to cooperate and report to the hospital promptly with the first recurrence of bleeding. She must remain within easy reach of the hospital. A ready source of compatible blood must be available, preferably in a well-stocked blood bank. There must be avoidance of excesses of activity including coitus.

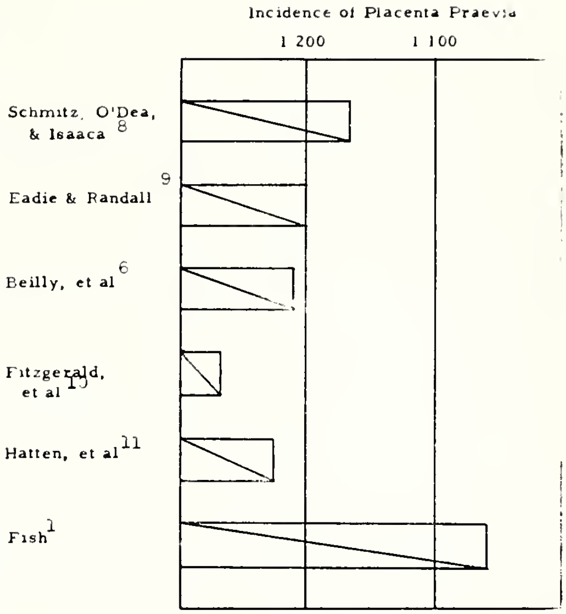
The chief advantage of expectant management of placenta praevia is increased fetal salvage. Beilly, Greenberg, Aaron, and Peck[6] reporting on placenta praevia observed over an eleven-year period reported a drop of fetal mortality from 28.2 per cent during the first six years to 9.8 per cent during the last five years when expectant management was practiced.

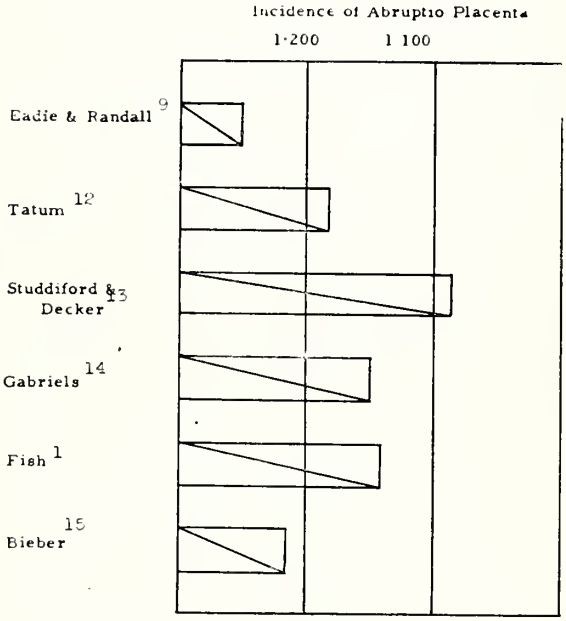
Third Trimester Bleeding—1

Etiology
- A. Extrauterine Sources
  - 1. Cervix
    - a. Erosion
    - b. Polyp
    - c. Carcinoma
  - 2. Vagina
    - a. Vaginitis
    - b. Condylomata
    - c. Ruptured varix
  - 3. Urethra
    - a. Urethritis
    - b. Caruncle

Third Trimester Bleeding—2

Etiology
- B. Intrauterine Sources
  - 1. Placenta Praevia
  - 2. Abruptio Placenta
  - 3. Rupture of Marginal Sinus
  - 4. Circumvallate Placenta
  - 5. Rupture of Vasa Praevia





DISCUSSION

Dr. W. L. Thornton (Meridian)— In placenta abruption the picture presented is bleeding, pain and a uterus that never fully relaxes but remains both tender and tense. Many cases will have no external bleeding. It occurs very frequently in those cases that have a tendency to toxemia with hypertension and in these cases one should always be on the lookout for this as well as other conditions occurring at this time.

The more severe cases usually occur before labor onset and usually have hidden bleeding, the milder cases usually occur in labor with external bleeding. These patients may or may not show signs of shock depending on severity of hemorrhage.

In the treatment, control bleeding, treat shock and empty the uterus as soon as feasible. If the fetal tones are present and there is a good chance of saving a viable baby, probably a Caesarean section would be the most rapid means of handling this. However, if the case is mild and the conditions for vaginal delivery are ripe—cervix soft, effaced and partially dilated—one can use the vaginal route with rupturing of the membranes. If the cervix is hard, firm and long; one should resort to a section without delay.

One word post-partally about this condition — toxemia can manifest itself at this time in a rather severe state and the occurrence of post-partum hemorrhage from afibrogenemia is very high. In these unexplained hemorrhages it is wise to get a fibrogen index immediately. Again always have plenty of blood available, along with fibrinogen.

In placenta previa the occurrence is usually the last few months and is painless. At first slight bleeding which may clear entirely and on recurring will be a little more severe each time. Repeated little bleeding episodes can lead to a severe anemia. The more the placenta encroaches on the internal os the greater the bleeding.

Due to the fact that the uterus will relax if the contractions are present and the uterus is not as tender as in an abruptio, it may not be advisable to examine these patients at the original onset or at any following episode until the fetus is viable. The closer to term you can carry these, the greater the chance of fetal salvage. One knows by diagnosis if this is present or at least have a good idea and if you can keep the family off your neck, it is best to leave off any examination until you are ready to deliver the patient or until your hand is forced by increased bleeding. An expectant régime of having blood immediately available and complete explanation to patient and husband of the situation may lead to better cooperation. Don't keep these patients in the dark; caution them on complete bed rest if there is any bleeding, and prompt notification of the physician. Replacement of blood may be indicated from time to time.

At best when one is ready for the delivery a sterile vaginal exam can be done (rectal exams at any time in this condition are dangerous, as bleeding can occur following them as well as by vaginal and give one very little if any idea of condition. At this time one should be ready immediately to follow the vaginal or section route in delivery and have plenty of blood available). A very gentle vaginal exam carefully done under sterile conditions will give one an idea as to what route to take. If the encroachment of the internal os is slight, head engaging the cervix ripe (soft, effaced and partially dilated) one may rupture membranes and proceed in this manner vaginally, carefully following fetal tones repeatedly. In complete or great encroachment in the internal os. Caesarean section is the method of choice.

In both of these cases vaginal deliveries should be carried out only if there are no feto-pelvic abnormalities.

There are also those cases that will have bleeding that will not fall into either category and watchful waiting is still the best means to handle them.

Dr. W. B. Inmon (Jackson) — Actually, bleeding in the last three months of pregnancy is not rare. If you are delivering 20 babies each month, you will probably face this disturbing situation about ten times each year or almost once a month.

It is difficult to determine if bleeding is significant. Dr. McLaurin has described significant bleeding as 200 cc.—others as a cupful or whether the amount was sufficient to run down the legs. However, there are occasions when even a small amount of bleeding may be an indication of a placenta praevia, and it has been wisely said that if bleeding is sufficient to disturb the patient, it should disturb the physician. In the final analysis, the decision is made by the physician on the basis of his clinical judgment and experience.

We believe vaginal examination should be done but never without the proper precautions. At the University Hospital our routine for examination consists of:

1. Examination is done in our operating room with preparations completed and personnel available for immediate delivery by Caesarean section or vaginal route.
2. An eighteen-gauge needle is already in a vein with blood attached or available within the room.
3. A second vein has been selected and equipment for "cut-down" is immediately at hand.
4. Equipment and personnel for care and resuscitation of the baby are available.

These will not appear to be excessive precautions to anyone who has had the terrifying experience of witnessing the profound hemorrhage which results from perforating or dislodging a placenta praevia.

Approximately 20 per cent of placenta praevias are associated with abnormal presentations and in 55 to 60 per cent of the remainder the head will be floating. Because of this association, abnormal presentations should immediately bring to mind the possibility of a placenta praevia. Where placenta praevia exists, hemorrhage following delivery by the vaginal or abdominal route is not uncommon. This is due to the implantation in the thin lower uterine segment. This portion of the uterus is unable to contract adequately about the vessels supplying the placental site and bleeding is the result.

I agree with Dr. McLaurin that severe abruption of the placenta is almost always associated with toxemia of pregnancy or toxemia superimposed upon hypertensive disease. Systolic blood pressure on admission is rarely less than 90 mm. of mercury, but this may represent a shock level since the blood pressure prior to abruption may well have been 190 and thus a drop of 100 mm. of mercury has occurred. The lower nephron syndrome and afibrinogenemia are also very real hazards.

Ultimately vaginal examination is to be performed in order to establish a definite diagnosis of placenta praevia if it has not been ruled out by other diagnostic efforts. Because of the tendency of any vaginal manipulation to lead to recurrence of or increase in amount of bleeding, it should be delayed until optimal circumstances exist. The first of these is a double set-up in the delivery room or operating room with which the patient can be immediately put down on the table for cesarean section should additional hemorrhage be initiated with vaginal examination. Another prime requirement is availability of adequate quantities of compatible blood for replacement of potential blood loss. The final suggestion is that the procedure of vaginal examination be delayed until it is felt that the time for instituting definite treatment is at hand.

There are three purposes of the vaginal examination. The first of these is to confirm the diagnosis of placenta praevia and to determine location of the placenta. The second is to determine the choice of method for delivery. In order to make this decision it is necessary to determine the condition of the cervix, the fetal presentation, position, and station, and the degree of placenta praevia. Finally, if the vaginal route is selected as the choice of delivery methods, rupture of the membranes, application of Willett's forceps to the scalp or other treatment methods as may be indicated at the time should be initiated.

Vaginal examination must be a very gentle, but careful and deliberate procedure. It is more likely to be productive of accurate information if the bladder has been emptied. The examining fingers should first explore the lower uterine segment for irregularities in thickness of tissue between the examining fingers and the presenting part. Then the cervical os may be approached with extreme gentleness. No effort must be made to explore a closed cervix, but if the cervix is three or four cms. dilated it is possible to feel membrane or placenta between the examining finger and the presenting part. Efforts to explore beyond the internal os will most often initiate bleeding from the placental margin if it is within reach. Hence the need for gentleness and caution while making the examination and the necessity for having blood available for immediate use.

After having confirmed the diagnosis of placenta praevia by vaginal examination, a choice must be made between vaginal delivery and cesarean section. Cesarean section is undoubtedly the proper choice in complete placenta praevia, in the situation existing when the marginal or partial praevia diminishes the pelvic measurements such that the fetal head will not engage, when there is a partial praevia with a living and viable baby, and when there is profuse uncontrollable hemorrhage. Vaginal delivery is wise with a low implantation or marginal placenta when the cervix is ripe and rupture of the membranes is followed by descent of the fetal head against the lower uterine segment and placenta.

There are numerous patients with painless vaginal bleeding in the third trimester who do not have placenta praevia or abruptio placenta. They respond to expectant management with an occasional recurrence. Presumably one would classify these as being rupture of the marginal sinus. Ferguson[7] reporting on a series of 2,251 deliveries on the Tulane Service at Charity Hospital in New Orleans noted the appearance of bleeding from ruptured marginal sinus with greater frequency than placenta praevia and abruptio combined. The only possible confirmation of the diagnosis is inspection of the placenta at the time of delivery and discovery of an old adherent clot at the placental edge with a thrombus extending inside the sinus.

The question of management of ruptured marginal sinus is somewhat equivocal in that the diagnosis, although suspected, cannot be made or confirmed until after delivery. These patients naturally fall into the same group as those with placenta praevia, and expectant management with delay of vaginal examination and definitive treatment until onset of labor or maturity of the fetus applies as it would with placenta praevia.

SUMMARY

A discussion has been given of the causes of third trimester bleeding. Particular emphasis has been given to placenta praevia and abruptio placenta and their management.

Medical Center Miscellany

The Cardiovascular Seminar held at the University Medical Center each April will this year offer predominantly clinical course content designed to assist the family physician with his heart disease problems.

Scheduled for April 2 through April 4 the seminar is sponsored by the Mississippi Heart Association and will present five lecturers on cardiovascular disease.

Dr. Louis N. Katz, director of the cardiovascular department, Medical Research Institute, Michael Reese Hospital, Chicago, will speak April 2 on the clinical application of recent advances in atherosclerosis and will deliver two lectures the following day on the mechanisms of congestive heart failure and the significance of some of its manifestations.

Other discussants will be on each of the three days. The guest faculty and their topics are: Dr. Henry T. Bahnson, associate professor of surgery, Johns Hopkins, aneurysm and open heart surgery; Dr. John H. Moyer, professor of internal medicine and chairman of the department, The Hahnemann Medical College and Hospital of Philadelphia, hypertensive crises, therapy of hypertensive disease and differential diagnosis of anginal pain.

Dr. Catherine A. Neill, assistant professor of pediatrics at Johns Hopkins, pulmonary complications in congenital heart disease and diagnosis and management of congestive heart failure in children; Dr. Conger Williams, instructor in medicine, Harvard University, pericardial disease and the pitfalls of electrocardiography.

Dr. J. Manning Hudson, clinical instructor in medicine, is chairman of the heart association professional education committee which plans the annual seminar in co-operation with the Medical Center Postgraduate Education Committee.

Last year, 130 physicians, including registrants from three adjacent states, came to the five-day course at the Medical Center when seven eminent guest lecturers spoke. It is anticipated that the 1959 seminar will again be keyed to the specialist.

Attendance in the course will be accepted for 20 hours Category I (formal) credit towards the postgraduate requirements of the American Academy of General Practice.

Orthopedics Research Award

Dr. W. F. Enneking, associate professor of surgery and director of the orthopedics division at the University Medical Center, was awarded the annual Kappa Delta prize for outstanding orthopedics research in February.

Selected by the scientific committee of the American Academy of Orthopedic Surgeons for the award which carries with it a $1,000 prize, Dr. Enneking accepted both certificate and check at the academy's yearly meeting in New York City.

Considered the nation's top orthopedics research accomplished last year, Dr. Enneking's project is entitled "The Effect of Total Body Irradiation on Bone Transplants in Parabiosed Animals.."

Grants from the United States Public Health Service and the Easter Seal Foundation help support the project.

Southern Neurosurgical Society

Dr. Orlando J. Andy, professor of neurosurgery and Dr. Charles Neill, clinical assistant professor, are co-chairmen of local arrangements for a meeting of the Southern Neurosurgical Society in Jackson.

The conference will begin with a scientific session at the Medical Center on Friday, March 21. Participants will tour the Center during the morning and will have lunch in the cafeteria.

Continuing at the Edwards Hotel, meeting headquarters, the conferences will conclude at noon on Saturday, March 22.

Actinomycosis in Pregnancy*

WITH A CASE REPORT

RAYMOND W. BROWNING, M.D.
Centreville, Miss.

INTRODUCTION

WHILE REFLECTING upon a recent obstetric patient who had actinomycosis, it occurred to me that this disease must be a rather unusual complication of pregnancy. A diligent review of the literature over the past fifteen years revealed that indeed only two cases have been reported, and in both of these instances the pregnancy ended in abortion. The case herein reported is therefore believed to be the only one in the past fifteen years in which there was a favorable outcome for both mother and fetus.

REVIEW OF THE LITERATURE

Campbell and Bradford[1] reported a case of actinomycosis in pregnancy in 1948. Their patient was a 24-year-old white female whose previous obstetrical history was not stated. She had actinomycosis of the pelvic organs following an appendectomy and aborted after two months gestation. She was treated with incision and drainage by way of a posterior colpotomy and a lowered midline incision and with intensive iodide and x-ray therapy. The dosage of iodide was not mentioned, but 1600 roentgens of x-ray to each of two anterior and two posterior ports were given. In spite of this treatment, together with blood transfusions and other supporting measures, the patient died about one year after the onset of the disease and had complete necrosis of pelvic organs with involvement of the rectum, rectosigmoid, cecum, ileum, bladder, ureters and one kidney.

In 1949, Kahle and Mellinger[2] reported a second case of actinomycosis in pregnancy occurring in a 20-year-old colored female, gravida II, para I. Although it was not proved, this patient probably had actinomycosis during her first pregnancy also. She had primary right renal actinomycosis and was treated with sulfathiazole and afterwards with penicillin without improvement. The dosage of penicillin used was 20,000 units every three hours, and it probably was inadequate. A therapeutic abortion was done without improvement. Finally a right nephrectomy resulted in an apparent cure.

In the first case no mention was made of the condition of the fetus which was aborted after two months pregnancy. In the second, which aborted at five months pregnancy, it was stated that the fetus appeared normal and showed no evidence of infection.

CASE REPORT

M. M. is a 31-year-old colored female, gravida VII, para VI, whose last menstrual period was the last of May, 1955, and expected date of confinement was early March, 1956. She first came to the clinic on September 24, 1955, complaining of pain and tenderness in the region of the right hip. An elevated area which was indurated, tender, red, slightly warm and 11 cms. in diameter was found on the lateral aspect of the right hip, just inferior to the right iliac crest. She had no fever and no other symptoms except those attributable to a four months pregnancy. Positive physical findings at that time were limited to the indurated area over the right hip and enlargement of the uterus compatible with a four months pregnancy. Two grams of sulfadiazine initially and one gram four times daily together with one dram of citralka four times daily were started empirically. The patient was instructed to force fluids to at least three liters per day and to return in four days for further observation. When she returned, two draining sinuses were found in the central portion of the induration. The material draining from these sinuses was seropurulent and contained numerous tiny yellowish white granules. Microscopically these granules, when crushed between cover slip and slide, were seen to consist of thread-like filaments arranged in a radial manner with club-shaped extremities characteristic of the ray-fungus. An x-ray of the pelvis at this time revealed no bony abnormality. The serologic test for syphilis was negative, the hemoglobin was 8.5 gms. per 100 cc., the white blood count was 6,700 with 68 per cent neutrophils, 20 per cent lymphocytes, 8 per cent eosinophiles, 3 per cent monocytes and 1 per cent basophil. Urinalysis was normal except for 1-plus sugar, and the fasting blood sugar was 103 mgs. per cent.

Sulfadiazine and citralka were continued as before; and saturated solution of potassium iodide, 15 mm. three times daily after meals, ferrous sulfate, 10 grains three times daily after meals, and supplemental calcium and vitamins were added to the régime. On this treatment the original lesion gradually became soft and stopped draining, but a heavily pigmented area about 11 cms. in diameter was left on the skin. On December 10, 1955, when she returned for her regular weekly visit, a new lesion similar to the first about 5 cms. in diameter was left on the skin. On December 10, 1955, when she returned for her regular weekly visit, a new lesion similar to the first about 5 cms. in diameter was found over the anterior superior iliac spine, and it began to drain the characteristic material containing sulphur granules about one week later. She had been taking sulfadiazine and potassium iodine regularly since the diagnosis was first made. On January 7, 1956, another new lesion similar to the second had developed over the right posterior superior iliac spine. In view of the unsatisfactory response to outpatient therapy, the patient was admitted to the hospital and started on procaine penicillin, 1.6 million units daily in two divided doses. Sulfadiazine was discontinued but potassium iodide, ribothiron. calcium and vitamins were continued. During the next three weeks there was slight improvement in that there was less drainage and less induration of the involved areas. On February 29, 1956, the patient started labor and delivered a healthy term female infant spontaneously without complications. The infant was healthy in all respects and was allowed to nurse its mother's breast. Both mother and baby did well, and the mother was continued on the same treatment. There was apparent continued slow improvement in the local lesions. On April 9, 1956, an x-ray of the pelvis revealed a definite abnormality of the upper surface of the right ilium. There was a lacy calcific deposit above the upper margin of this bone and slightl mottling of the trabecular pattern of the subjacent boone. There were also some sclerotic changes in the ilium extending down along the iliac side of the sacroiliac joint. The remainder of the pelvis appeared normal. A barium enema showed some malrotation of the right side of the colon and there was filling of the somewhat narrow and elongated appendix, the tip of which apparently extended over into the general region of the right iliac crest. These findings gave rise to the interesting speculation of the possible origin of the infection from an involved appendix and also to the possible need for surgical intervention to unroof the bony involvement. Orthopedic surgical consultation was obtained, and the consultant recommended continued conservative therapy at that time. Penicillin and potassium iodide were continued in the same dosage through May, 1956, at which time the local lesions on the patient's hip had entirely resolved except for a residual pigmentation in the skin and some scarring from the previous draining sinuses.

DISCUSSION

Actinomycosis is an infection in man or animals with *Actinomyces bovis*, an anaerobic, Gram-positive, branching, filamentous micro-organism intermediate between bacteria and molds. In tissues these germs tend to grow as tiny crumb-like masses which look like and are called "sulphur granules." Microscopically each such granule is seen to consist of a branched mycelium, the branches extending outward in a radial fashion with the ends swollen into eosinophilic "clubs." This characteristic radial arrangement is responsible for the name actinomycete (ray-fungus). The presence of these easily identifiable characteristic particles in the exudate from lesions usually render the diagnosis easy for the alert observer[3],[4].

Infection with this organism produces a progressive subacute or chronic disease characterized by granulating, indurated swellings in connective tissue with formation of a moderate amount of seropurulent pus containing the characteristic sulphur granules. The disease spreads by direct extension and tends to point toward the skin or rarely toward mucous membranes. It may also rarely toward mucous membranes. It may also be disseminated by way of the blood, bronchi, or rarely, the lymphatics.

The disease is classified as cervicofacial, thoracic, or abdominal, depending upon the location of the connective tissue involved. About one-half the cases are cervicofacial, 15 per cent are thoracic and 20 per cent are abdominal. Involvement of connective tissues in other parts of the body make up the remainder and cutaneous involvement is nearly always secondary to spread by contiguity[3],[4].

For a detailed and complete description of the disease, the reader is referred to the work of Cope[4].

The treatment of choice for actinomycosis is penicillin in large doses for long periods of time. It is recommended that daily doses of at least 1.6 million units be given for at least three months. In case of sensitivity to penicillin, good results may be obtained with almost any antibiotic except streptomycin. In fact, sensitivity varies, and one might best be guided in the choice of an antibiotic by in vitro sensitivity studies[5]. Judicious use of incision and drainage, excision of diseased tissue and other adjunctive measures such as rest, symptomatic measures and proper nutrition should not be neglected. When the disease complicates pregnancy, meticulous prenatal care combined with intensive treatment of the disease should make the prognosis fairly good for both mother and child. From a knowledge of the nature of the disease and from the cases reviewed and reported in this paper, one would not expect the fetus to be endangered by the disease unless the infection involved the uterus or adjacent structures or unless the general condition of the mother became unfavorable to continued gestation.

SUMMARY AND CONCLUSIONS

A case of actinomycosis complicating pregnancy is presented. The medical literature during the past 15 years contains reports of only two other cases, and these are reviewed. A brief description of the disease is presented. Intensive treatment with penicillin or other antibiotics together with incision and drainage, excision of diseased tissue, and other adjunctive measures should render the prognosis for both mother and fetus much more favorable than it has been in the past.

BIBLIOGRAPHY

1. Kahle, P. Jorda, and Mellinger, George T. Renal Actinomycosis in Pregnancy. Urologic and Cutaneous Review 53: 720-723, 1949.
2. Campbell, Darrell A., and Bradford, Bert Jr. Actinomycosis of the Thorax and Abdomen. Archives of Surgery 57: 202-216, 1948.
3. Conant, Norman F., and Roseburg, Theodor. The Actinomycetes. In Bacterial and Mycotic Infection of Man edited by René J. Dubos. Philadelphia, London, Montreal: J. B. Lippincott, 785 pp., 1948.
4. Cope, Z. Actinomycosis. London: Oxford University Press, 1938.
5. Seabury, John H. Personal Communication.

INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW

JOSEPH P. MELVIN, Jr., M.D.	Cordiology
HARVEY F. GARRISON, Sr., M.D.	Pediotrics
JAMES D. HARDY, M.D., and STAFF, Department of Surgery, University Medical Center	Surgery

CARDIOLOGY

Current Status of Therapy in Bacterial Endocarditis—*JMA* Vol. 166, No. 4, January, 1958, page 364—Maxwell Finland, M.D., Boston, Mass.

Dr. Finland states that the primary purpose of this paper is to summarize and discuss briefly the current status of the use of drugs in the definitive treatment of cases of bacterial endocarditis, with some mention of surgical procedures also included. No description of the clinical features of the disease is listed but a review of the literature concerning the use of antibiotics in this disease and reference to previous discussion of the disease and its treatment mentioned. Certain points are brought out that may be mentioned as the more important ones in this discussion, and these are as follows:

1. Penicillin is the agent of choice for all cases in which the causative organisms are highly or moderately sensitive to it, including streptococci, pneumococci, gonococci, and micrococci. However, penicillin is not recommended in micrococci (staphylococcic) infection when the organism is moderately or highly resistant, and there are some reasons for avoiding the use of penicillin in such cases.

2. Streptomycin should be used in addition to penicillin for infections with any of the enterococci with streptococci of the viridans group that require 0.2 unit per cc. or more of penicillin to inhibit them.

3. None of the tetracyclines or chloramphenicol should be used alone in the treatment of endocarditis caused by Gram positive organisms, even when such organisms are moderately or even highly sensitive in vitro. The same, however, is not equally true in the treatment of infections with highly susceptible gram negative bacilli, but it is best in such cases to combine one of the broad spectrum antibiotics with streptomycin or polymyxin B when the organisms are also susceptible to these agents.

4. Streptomycin, erythromycin, and the other erythromycin-like antibiotics (carbomycin, oleandomycin, spiramycin) or novobiocin should never be used alone in the treatment of bacterial endocarditis, even when the causative organism is highly sensitive in vitro, because of the marked tendency of the organisms to become resistant to these agents.

5. Combinations of erythromycin or novobiocin with streptomycin or of any of these three agents with bacitracin or with one of the broad spectrum antibiotics may be used provided the causative organism is still at least moderately susceptible to each component before the combination is started.

6. None of the currently available agents in the erythromycin group, other than erythromycin itself can be recommended in the treatment of endocarditis.

7. In the treatment of endocarditis due to Ps. aeruginosa, polymyxin B is the drug of choice except when severe renal damage is present, used preferably in combination with another agent to which the organism is still sensitive.

8. Bacitracin is a useful agent in the treatment of penicillin-resistant micrococcic infection, especially when combined with erythromycin, novobiocin, one of the tetracyclines or chloramphenicol, provided the organism is also sensitive to these agents and renal function is not already impaired.

9. Sulfonamides are of little, if any, use.

10. Except for penicillin, all antibiotics are given, whenever possible, in the maximum tolerated doses, at least at the start and for the first two or three weeks. The total dosage of penicillin is regulated by the sensitivity of the organism, whether the organism is proved by blood culture and how the clinical course of the patient decides.

COMMENT: This is an extremely comprehensive and complete review of current status of therapy and should be kept for frequent and easy access for all physicians who see even a seldom case of this disease. Almost any particular circumstance or combination of circumstances can be adequately handled by recourse to this article, in the latest and approved clinical approach.

PEDIATRICS

Long-Continued Adrenal Hormone Therapy

IN CHILDHOOD NEPHROSIS. C. F. Piel and G. F. Williams. J. Am. M. Women's A. 12:273-279 (Sept.) 1957 (New York).

This report deals with 22 children with nephrosis, the majority of whom were between two and four years of age. The schedule of steroid therapy varied somewhat from child to child, but generally each child received 1 mg. per pound of body weight of a steroid daily, usually prednisone or corticotropin (ACTH) gel, until diuresis occurred and the urine remained free of protein for 1 week. Maintenance therapy, consisting of the same dosage of steroid for three consecutive days of each week, was then started. The maintenance dose was gradually reduced to approximately 20 mg. daily for the three consecutive days weekly and continued at this low dosage schedule for one year after cessation of proteinuria. Potassium and antibiotics were given only when indicated. The appearance of protein in the urine without association with infection and disappeared when the infection was controlled.

Nineteen of the 22 children were treated within seven months of the onset; three were treated years after the initial episode. Thirteen responded promptly to steroids. Nine required daily large doses of steroids for many weeks and months before cessation of proteinuria. Four have been without medication for one to six months and free of proteinuria for three to 14 months. Ten of these 22 patients have had only one edematous episode. Long-continued steroid therapy offers a means of controlling the signs and symptoms of nephrosis. Whether or not the rate of mortality is changed awaits reports on a greater number of patients followed for a longer period of time.

COMMENT

Apparently the suggestions made in this abstract is good practice. Heretofore, remedial agencies have not been so effective. These suggestions are at least worthy of trial.

SURGERY

FOLLOW-UP ON 200 PATIENTS TREATED FOR HIRSCHSPRUNG'S DISEASE DURING A TEN-YEAR PERIOD. Ann. Surg. 146: No. 4, 706-714, 1957

ORVAR SWENSON, M.D.

Ten years ago Dr. Swenson postulated that the cause of congenital megacolon is dysfunction of a terminal segment of colon. This was based on the observation that a transverse colostomy relieved the patient's distention, on manometric studies which showed that the dilated colon had normal peristaltic action while propulsive peristalsis was absent in the normal size rectosigmoid, and in the demonstration that the dilated segment contained normal appearing ganglion cells while these were absent in the terminal segment. He devised an operation based on these findings in which the normal appearing, but functionally defective, segment of terminal colon is removed by an abdominoperineal "pull-through" with preservation of the anal sphincter.

In 200 consecutive patients subjected to this operation, there were six postoperative deaths. Four of the six deaths were infants. For this reason the writer now maintains infants with a colostomy until the age of 12 to 18 months when the definitive operation is done. Postoperative complications of a serious nature apparently occurred in sixteen instances, including nine cases in whom there were anastomotic strictures, all but one of which responded to dilitation. Although pelvic complications did not contribute to the mortality, there were two leaks at the anastomosis, two pelvic abscesses of one kind or another, and one rectovaginal fistula.

Most of the 200 patients have been followed by the author. In others, reports from the patients' family or physician were used. Four patients were lost to follow-up. Of seventy-three patients followed from five to ten years, all were completely normal except one who has recurrent bouts of gastroenteritis. Of sixty-four patients followed two to five years, only one was not completely normal at the time of follow-up, he having chronic diarrhea which had improved. Of the fifty-two patients operated upon in the past two years, three are not completely normal. Two of these have recurrent diarrhea and one continues to be somewhat constipated. This makes a total of five patients out of the 200 that have less than perfectly normal colon function. Incontinence has not been a problem nor has difficulty with ejaculation.

There were seven patients in the series who had had previously a segmental resection of the left colon with anastomosis made at the peritoneal reflection. These patients had persistent symptoms until subjected to reoperation with removal of the rectum. Dr. Swenson feels that resection to within two centimeters of the anal canal is necessary for good results and that the series presented demonstrates that this can be accomplished without loss of continence or of power of ejaculation and with a very acceptable morbidity and mortality rate.

(Article reviewed by Dr. John O. Dampeer, Jr., Chief Resident in Surgery, University Medical Center, Jackson.)

MISSISSIPPI ACADEMY OF GENERAL PRACTICE

MEMBERSHIP

MAGP membership increased by nine at the January meeting of the Board of Directors. Five active and four associate members were accepted.

Active are: Dr. James Otis Stephens, Magee; Dr. George L. Miller, West Point; Dr. Edward Pennington, Ackerman; Dr. Henry B. Goodman, Rolling Fork; and Dr. Harvey L. Flowers, West Point.

Associate are: Dr. Robert A. Mitchell, Batesville; Dr. William R. Campbell, Prentiss; Dr. Pete H. Rhymes, Philadelphia; and Dr. Antone Tannehill, Nettleton.

SUCCESSFUL SEMINAR

The 92 physicians attending the post-graduate Seminar, with round-table discussions, acclaimed it a smashing success. The speakers gave excellent presentations, and the afternoon discussions were informative and stimulating. Five hours of Category I credit were awarded for attendance at the meeting.

VACATION, ANYONE?

Notice has been received of two courses sponsored by the Florida Academy of General Practice. The second Annual Cardiovascular Seminar will be held in Tampa on March 29, 1958. It is accepted for six hours of Category I credit.

The post-graduate obstetric-pediatric seminar will be held in Daytona Beach on September 8-10, 1958. It is accepted for 15 hours of Category I credit.

INFORMATION FOR NON-MEMBERS

The following are admission requirements of the Academy. All who qualify are invited to join, and application blanks may be secured by writing to Miss Louise Lacey, Executive Secretary, P. O. Box 1435, Jackson, Mississippi.

1. Graduate of an approved medical school.

2. Completed an approved internship.

3. Active member, in good standing, of local medical society and the Mississippi State Medical Association.

4. Residency and/or practice: either

    1) two years' approved residency; or

    2) one year's approved residency followed by two years' of general practice; or

    3) three years' general practice.

Time spent as a medical officer in military service may be applied for practice requirement and (for a maximum of one year) to alternative 1).

5. Must be engaged in the general practice of medicine.

Those who do not qualify for active membership under 4 above, may be elected to associate membership on a year-to-year basis, until they qualify for active membership.

Oswald West, a former governor of Oregon, has made this acid little observation: "If the Sputnik critics of our educational system will have a little patience, they will find that we will soon be turning out graduates who can pass a football to the moon—were some Russians there to receive it."

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $3.00.

W. H. ANDERSON, M.D. .... **Editor-in-Chief**
MILDRED P. ANDERSON .... **Assistant Editor**

MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY
J. Max Roy, M.D. .... President
Forrest City, Ark.
W. G. Stephenson, M.D. .... President-elect
Chattanooga, Tenn.
Julian K. Welch, Jr., M.D. .... Vice-President
Brownsville, Tenn.
Robert Peeples, M.D. .... Vice-President
Greenwood, Miss.
Ernest J. Stroud, M.D. .... Vice-President
Jinesboro, Ark.
Thurman Crawford, M.D. .... Secretary-Treasurer
Memphis, Tenn.

Mid-South Associate Editors
H. King Wade, M.D. .... Hot Springs, Ark.
Frank M. Acree, M.D. .... Greenville, Miss.
R. L. Sanders, M.D. .... Memphis, Tenn.

MISSISSIPPI STATE MEDICAL ASSOCIATION
Howard A. Nelson, M.D. .... Greenwood
President
Guy T. Vise, M.D. .... Meridian
President-elect
Geo. W. Twente, M.D. .... Jackson
Secretary
Rowland B. Kennedy .... Jackson
Executive Secretary

State Associate Editors
Louis F. Rittlemeyer, M.D. .... Meridian, Miss.
John T. Bryan, M.D. .... Meridian, Miss.

The Publication Committee is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.

Address all material for publication to W. H. Anderson, M.D., 104 Hospitality Street, Booneville, Mississippi.

COMPREHENSIVE MEDICAL INSURANCE

Health insurance is undergoing rapid change these days. Like many other facets of medicine, some old formulas are being abandoned and others are being modified to meet new problems. In the field of medical-surgical-hospital coverage, group comprehensive policies are growing at an astonishing pace.

Former AMA President Elmer Hess, in an article in the Journal of the American Medical Association (February 1, 1958, page 472), states that the number of people covered by this new type of insurance increased from 51,000 to 1,413,000 in the two-year period ending in 1956. During this time the number of group policies issued leaped from 100 to 1,790. This is expansion in a big way.

How does this type policy differ from the Blue plans and other conventional insurance? Hess explains that comprehensive insurance is a plan "which, 1) after the individual pays a small initial deductible amount, 2) provides reimbursement of a substantial proportion (75 per cent or more) of expense incurred for virtually the entire range of medical expenses, 3) in or out of a hospital, 4) up to high over-all meximum amounts 5) without arbitrary fee schedules or other 'inside limits' and 6) permits complete freedom in selection of physician, hospital or other source of medical care."

It differs not only from the Blue plans but also from the so-called catastrophic coverage with deductible amounts of $300 or more. In comprehensive plans, the deductible amount is between $25 and $50, with a co-insurance feature after the first few hundred dollars. Benefit ceilings are high paying as much as $7500 in a single year and $15,000 in a lifetime. Exclusions are few, such as dental work, preventive care, and refractions.

This appears to be a significant step forward. With left-wing groups stepping up the clamor for more government-financed schemes, private enterprise has an opportunity to meet this challenge with plans such as these. If the gradual socialization of medicine is to be checked, physicians and insurance companies must combine their brains and talents to offer a more attractive alternative to the public.

Hess concludes that the success of comprehensive insurance "in helping to meet the nation's health needs will depend in large measure on voluntary cooperation in its use, not abuse—by patients, physicians, and all others involved." By applying some of the vision and imagination that doctors employ daily in tackling the many problems they face in clinical practice, the medical profession can lick the spectre of socialism. Comprehensive medical insurance looks like a good project to study—and get to work on.

—L.F.R

ACCIDENT PROBLEMS TACKLED

We should keep and read and re-read the paper of Dr. Fletcher D. Woodward of the University of Virginia on "General Medical Aspects of Auto Crash Injuries and Deaths". This subject presents the greatest single challenge to the medical profession and to every citizen in the nation. Dr. Woodward has taken off the bridle and has presented the facts. It is fine to see the American Medical Association turning its interest to this great problem.

MID-SOUTH ASSEMBLY PROMOTED

When Dr. C. W. Patterson, president of the Mid-South Postgraduate Medical Assembly, entertained the members of the Past Presidents Club at the Peabody Hotel with dinner, sixteen of the eighteen members were present. The next day Dr. Lawrence Long of Jackson who originated the club came in leaving only Dr. Nease of Newport not attending the Assembly. We think this a fine record. The Past Presidents Club offered to serve in an advisory capacity to promote the Assembly and to help increase the attendance, and in the medical meeting.

Dr. Max Roy of Forrest City, Arkansas is the incoming president and he will be a great help in every way in giving the doctors the best to be obtained. Dr. W. C. Stephenson of Chattanooga is president-elect. He has proved his worth in heading the Tennessee Valley Assembly. Mr. Leslie Adams is now executive secretary of the Mid-South, an able man with a fine personality and a level head. He will not leave anything undone for a Mid-South Assembly on the up and up.

DOWN TO EARTH

You will read with interest and with much benefit the paper of Dr. Fred Garvey, of Bowman Gray School of Medicine on "Infections of the Lower Urinary Tract in the Female". It is down to earth, a valuable discourse on a common every day condition.

FIFTY-YEAR CLUB HOST

The Fifty Year Club of Mississippi doctors will be entertained this coming session in May out at the University Center in Jackson by our fine Dean of Medicine, Dr. D. S. Pankratz. This is going to be a treat and we hope we may have the best attendance we have ever had. We are glad to note that Dr. W. H. Frizell, president of the club, who missed last year, expects to be back in presiding trim.

HEALTH CENTER

The Dr. Underwood Health Center in Jackson near the Medical Center will soon be a reality. It will be a fine tribute to a great and deserving man.

NURSING FACULTY

At the Medical Center we urgently need an adequate facility for a nursing school, a training school and a center for finishing the students who will soon be ready from the small schools of nursing. The Northeast Mississippi Junior College and Hospital, first to train under our new program, will soon provide some graduates.

PATRONIZE THEM

The advertisers in this journal are seeking to serve. The biological houses are working hand in hand with the medical profession to render a great service and to hasten the onward march of scientific medicine.

ANNUAL MEETING

It is now admitted that we have lagging economy in this nation. It needs stimulation. We can profit by what followed many years ago. School buildings and other permanent facilities served well then. Aid for Hill-Burton hospitals and health centers and aid for nursing schools could serve. Our state and our nation could show the part of wisdom by being liberal with appropriations at this time. Hill-Burton hospitals have spelled progress in a marvelous way. The work is not completed by any means. Talk to your representatives in the legislature and wire your senators and representatives in Congress and urge them to be liberal in appropriating funds at this time. It may serve more than one purpose.

IT MIGHT HELP

We now turn our attention to the annual meeting of the Mississippi State Medical Association. It holds its session in Jackson this year, our state capital and home of our four-year medical school. Every doctor should do his best to attend. The scientific papers will be good, the fellowship valuable, and our medical organization depends largely upon the state meeting. Jackson is centrally located and because of the Medical Center, it is well worth considering making Jackson the permanent meeting place of the association.

DR. W. G. STEPHENSON NEXT MID-SOUTH ASSEMBLY HEAD

Dr. William G. Stephenson, general surgeon of Chattanooga, was named president-elect of the Mid-South Postgraduate Medical Assembly last month at the Peabody.

Dr. J. Max Roy, general practitioner of Forrest

City, Ark., assumed the presidency, succeeding Dr. W. C. Patterson of Rosedale, Miss.

New vice-presidents are Dr. Julian K. Welch, Jr., of Brownsville, Tenn., Dr. Robert Peeples of Greenville, Miss., and Dr. Ernest J. Stroud of Jonesboro, Ark. Dr. P. Thurman Crawford of Memphis was re-elected secretary-treasurer.

Dr. Stephenson was graduated from the Medical College of Virginia in Richmond. He is a fellow of the American College of Surgeons and Southeastern Surgical Congress, a fellow and state regent of the International College of Surgeons, member of the Chattanooga Academy of Surgeons and Southern Medical Association. He is married and has three children.

DR. FELIX LONG

Services for Dr. Felix B. Long, retired Starkville physician, were held February 9.

Dr. Long died in Lanessa, Texas, after a heart attack. He was born in Choctaw County October 17, 1882. He received his high school education at Ackerman and he was graduated from the University of Tennessee Medical College in 1914.

From then until last November he engaged in the practice of medicine in Oktibbeha County. He served as county health officer from 1917 to 1923. He operated a hospital in Starkville from 1927 to 1944. In 1930 he received a loving cup in recognition of his services to the county.

He was a member of the First Methodist Church. Abert Masonic Lodge No. 89, the local Odd Fellows Lodge, and 13 medical associations. In 1951 the Felix Long Memorial Hospital was built in Starkville named in memory of his son who was Navy flight surgeon killed in the Battle of Guadalcanal. He is survived by his wife, formerly Maggie Bell, two brothers, Mayfield Long, Starkville, and Eddie Long of the Veteran's Hospital, Gulfport; five sisters, Mrs. Jessie Fancher, Columbus, Mrs. Gussie Williams, Mrs. Pearl Raines, and Mrs. Martha Blake all of Ackerman, and Mrs. Tessie Mercer, of Miami, Fla., three daughters, Miss Marie Long, of Lanessa, Tex., Mrs. E. W. Eberling, Tucson, Ariz., and Mrs. S. O. Oates, of Corinth; two sons, James Long, of San Francisco and Lawrence L. Long of Peoria, Ill.; five grandchildren.

DR. C. H. HOLMAN, SR.

Dr. Charles Hinds Holman, Sr., Carrollton physician more than half a century, died March 1 at University Hospital in Jackson, Miss. He was 77.

Services were held in Carrollton at the family home place.

Dr. Holman was born in Carroll County, son of the late Dr. Isaac Judson Holman and Annis McCarty Holman. He was graduated from the old Memphis Medical College in 1902 and did postgraduate work at the University of Chicago. He began practicing in Carroll County in 1903.

He was a member of the Greenwood Christian Church, the Carrollton Masonic Lodge, the North Central Mississippi Medical Society and the Mississippi Fifty-Year Club.

He leaves his wife, Mrs. Melissa Williams Holman; three sons, Charles H. Holman, Jr., of Jackson, Miss., James J. Holman of Coldwater and Henry F. Holman of Birmingham; a daughter, Mrs. Tom W. Tardy Jr., of Winona; a brother, W. H. Holman of Jackson, Miss., and three sisters, Mrs. A. A. Tate of Greenwood, Mrs. Eckford Bell of Jackson, Miss., and Mrs. Russell Cook of Utica.

DR. W. E. CLARK

Services for Dr. Walter Eugene Clark, 83, retired assistant superintendent of Mississippi State Hospital, Whitfield, were conducted Sunday, February 8.

Dr. Clark, a native of Kemper County, died in Ochsner Foundation Hospital, New Orleans. He made his home in Philadelphia since retirement in 1942.

After graduation from Vanderbilt University and the University of Tennessee. Dr. Clark practiced medicine in Copiah County from 1898 to 1918 when he joined the staff of the Mississippi State Hospital as assistant superintendent and clinical director, a position he held until his retirement.

He was a member of the American Medical Association, a fellow in the American College of Psychiatrists, the Masons and Philadelphia Baptist Church.

Survivors include four daughters, Mrs. Clyde Edmondson, Talledega, Ala., Mrs. Lamar Olliphant, Philadelphia, Mrs. W. E. Barlow, Crystal Springs, and Mrs. Louis Aurilio, New Orleans; one brother, Claiborn Clark; three sisters, Mrs. T. A. Allen, and Mrs. Shade Bethamy, all of Kemper County, and Mrs. Lamar Dye, Rockville, Texas.

ANNOUNCEMENTS

Arnold M. Meirowsky, M.D., announces the association of Peter B. Wallace, M.D., in the practice of neurological surgery, Suite 629, Medical Arts Building, Nashville 12, Tennessee.

Bland Cannon, M.D., announces the association of Sam Hunter, M.D., in the practice of neurological surgery. 1092 Madison Avenue, Memphis 4, Tennessee. Telephone BR 5-2105.

ERRATUM

We regret that the author of "Some Clinical Experiences with Parenteral Iron" in the February issue was printed Robert Ford, M.D., instead of Robert Ford Neal, M.D.

WANTED: Locum tenens one year beginning July 1, 1958. Physician interested in industrial medicine and limited general practice. Salary open. Contact Glass-Nelson Clinic, 2020 S. Xanthus, Tulsa, Oklahoma.

BOONEVILLE NURSING HOME

The policy of this excellent nursing home is to meet the individual needs of the sick and aged, to give the best care to the sick, aged, and convalescent.

OZELLE MULLINIX, Operator
PArk 8-5929 302 Bridge Street
Booneville, Mississippi

Injuries of the Hand With Loss of Skin*

H. MINOR NICHOLS, M.D.
Portland, Oregon

AVULSION INJURIES — BURNS SKIN GRAFTING — INDICATIONS AND TECHNIC AVULSION INJURIES OF THE UPPER EXTREMITY

THE STANDARD treatment of avulsion injuries of the extremities has been covered in the literature by such authorities as Sir Harold Gillies, Halfdan Cchjeldrup, Carlton Mathewson and Alfred Farmer. Farmer's method, as it is sometimes called, described in 1939, consisted of excision of the avulsed skin, removal of the subcutaneous fat from this skin and replacement of this same skin into the debrided defect as a free graft. This method seemed too radical to those who were not much experienced with avulsion injuries and, although it is now fairly well known, it is often not used where it should be. All too often a patient with an avulsion injury is subjected to improper primary treatment followed by a long and costly convalescence and much permanent disability.

ETIOLOGY

The skin may be avulsed from the body by a variety of forces which either crush, pinch, or tear with the result that the skin may be burst loose from its attachment, torn away in shreds, or peeled down like a stocking or glove. In any case a tangential force is applied which starts the skin sliding and tears the attachment between the subcutaneous and deep fascia. At times this tearing may separate the skin from the underlying tissues resulting gangrene of the skin without any open wound being present.

PATHOLOGY

Patchy areas of gangrene appear whenever skin flaps torn loose from an extremity are simply replaced. At times this gangrene may not involve the whole thickness of the skin but when final healing occurs, subcutaneous scarring with contractures will be present. Whatever the original force may be and whichever direction the flaps are torn loose, the pathogenesis of gangrene is probably from a circulatory derangement. Unquestionably interference with venous return occurs with passive congestion followed by thrombosis and hemorrhagic infarction. Where the tissues are torn off from above downward so that the flap is based distally it is easy to see how interference with venous return would occur. Where the skin is simply torn loose from its deep attachment without being lacerated anywhere, it is more difficult to understand why gangrene occurs.

DIAGNOSIS

Avulsions customarily are classified as to whether they are incomplete or complete, depending on whether there is some pedicle still existing between the avulsed tissue and its original bed or a complete loss of any circulatory contact. Incomplete avulsions are secondarily classified as to whether the pedicle is proximal or distal. The treatment varies considerably in these different classifications. The location of the avulsion is also important. Where the fat is thick as in the palm, the volar surface of the fingers and about the thenar eminence, the treatment is different from where the skin is thin. The condition of the avulsed skin is also of significance. Badly crushed or frayed skin will not recover as well as cleanly torn away skin. Regarding the circulation. Mathewson states that if the margins of the avulsed skin, when still attached by a pedicle, bleed when traumatized, the blood supply is intact and the pedicle may be replaced.

TREATMENT

When skin is torn away from the extremities the principle to follow should be the replacement of the defect with skin at the earliest possible moment. One of the four methods is available. 1) The original skin flaps with subcutaneous tissue may be sewed back in place. 2) The damaged skin may be excised and the defect repaired with free grafts of the Thiersch or Wolfe variety. Dermatome grafting makes this method readily available. 3) The avulsed skin may be completely excised, all of its subcutaneous fat removed and this same skin replaced as a full thickness graft (Farmer's method), or 4) the avulsed skin may be discarded and the defect filled or replaced with a flap graft from the abdomen or chest. This latter method is particularly applicable in upper extremity injuries.

Comparing the upper extremity with the leg, the proportion of cases where the skin was torn off like a glove or sleeve is reversed; thus, in the lower extremity over three-fourths of the injuries are of the true stocking or shoe-type with the skin actually being ripped loose and turned downward from above. In the upper extremity less than one-fourth of the cases encountered are of this type. In the other three-fourths the skin was torn away and more or less destroyed by the force causing the accident.

---

*Presented before the sixty-ninth annual session of the Mid-South Postgraduate Medical Assembly, February 11-14, 1958, Memphis, Tennessee.

The primary flap method is frequently the method of choice and should preferably be used over exposed tendons, bones or joints, where skin grafting would not be very successful, or where later reconstructive procedures will be required. At times a combination of the several methods may be necessary. In simple degloving or sleeve-type injuries where the skin is available for replacement, Farmer's method is probably preferred. This method should certainly be tried in replacing the skin of the palm. Free skin grafts are suitable where tendons and joints are not exposed and the recipient area will take a graft. Free skin grafts may also be used at times as a temporary biological dressing before flaps are applied.

Whenever skin is replaced it is usually better to remove the subcutaneous fat if there is any question about its viability. If the avulsed area is very large it should have multiple perforations made in it for drainage, and serum collection should be prevented by adding gentle pressure to keep the skin in apposition to the deep tissues.

The occasional operator should not experiment with any method that he is not familiar with and the use of flaps from a distance is definitely a hazardous procedure. Cases may, however, be easily transported in this day and age and it is recommended that this alternative be considered in any serious avulsion injury. When in doubt, the occasional operator may suture the available flaps back in place and carefully observe the wound for circulatory changes after twenty-four or forty-eight hours. If it is then apparent that something drastic be necessary, the patient can still be transferred although the golden opportunity for primary healing will have been missed.

BURNS

Burns of the hand are extremely common and even small burns are often very disabling. Thermal burns are the commonest, either from flames or exposure to hot fluids or solids while chemical burns and electrical burns as well as x-ray burns, friction burns, etc., are being observed in increasing numbers. Finally, exposure to cold may result in similar pathological process. Burns should be classified into two classes—superficial or partial thickness, and deep or full thickness depending on whether the skin is capable of healing spontaneously or is completely destroyed.

PATHOLOGY

The pathogenesis of all types of burns short of complete charring is a capillary response to thermal injury which may result in either capillary engorgement, loss of fluid through the capillaries or complete thrombosis of the capillaries, depending on the severity of the burn and the proximity of the capillaries to the burned area. There is an outpouring of interstitial fluid with the production of edema, and loss of fluid may occur from the wound itself. Edema develops rapidly during the first few hours after a burn and gradually subsides after thirty-six to forty-eight hours when the pressure within the tissues overcomes the pressure of extravasation. In full thickness burns the hard eschar present may mask the edema. However, edema is present in the tissues inside the extremity, and in the hand the proteins in this fluid may cause much stiffness later.

In partial thickness burns there is erythema and blistering which lifts off the epidermis in varying degrees. If enough epithelial elements remain they will heal the wound without disability provided proper treatment is carried out. With complete destruction of the skin grafting is mandatory even for small areas as no regeneration will take place except from the skin edges.

DIAGNOSIS

Judging the depth of a burn is a faculty which can only be learned by experience. In cases in which charring occurs or the skin is dead white or the blood in the superficial vessels can be seen to be coagulated, there should be no doubt in diagnosis. Vesiculation occurring almost immediately after the injury, with thick-walled blisters developing some time later, or simply an erythema which blisters later indicates a less severe burn. The presence or absence of pain is also a fairly reliable criterion, since pain is absent when the skin is entirely destroyed.

TREATMENT

The treatment of a severely burned patient cannot be adequately covered here. Often the general care is overlooked while the local care is adequate, or again the converse may occur. Both are important. Burn shock must be adequately combatted and can be anticipated whenever the area burned is larger than the exposed hands and face. Intravenous fluids and blood should be started as soon as the patient is admitted and an inlying catheter placed. The hourly urinary output should then be measured and in an adult the output should be from 30 to 60 cc. per hour. Children especially require careful observation of fluid balance. An adequate urinary output is the best criterion for judging whether shock is being properly treated. Tetanus antitoxin is given routinely.

LOCAL TREATMENT

For any burn there should follow the principle that no harm is done to what remains of the tissues, that they are adequately protected and that conditions are set up for regenerating epithelium (or skin grafts) to grow without impediment. Most authorities favor some form of occlusive dressing which is applied over fine mesh gauze after careful, gentle débridement of the burn. The position of function should always be maintained and the hand should be kept elevated during the early convalescence.

In general, any partial thickness burn should be healed in three weeks. Partial healing at this time should not encourage the doctor to wait longer as the result will not be as good as if skin grafting is carried out. In the preparation for skin grafting the bulk of medical opinion still favors repeated débridements and frequent dressing changes carried out under asceptic precautions. The application of various chemicals has not been shown to be of much advantage over plain saline dressings just as these chemicals have not been shown to make a partial thickness burn heal any faster. Immediate excision of the burned slough followed by skin grafting has a place but is not recommended for the occasional operator as it is not without risk and may produce unnecessary surgery. In isolated small, deep burns it may be the method of choice.

Preparation of the recipient area for a graft usually involves a final débridement done two or three days before grafting followed by the application of pressure dressings which are changed several times a day. A thin layer of healthy granulations with a ring of epithelium growing in from the edge indicates a wound which is ready for grafting. The general nutrition of the patients (maintained by forced feedings) is important.

Dermatome grafting has made other methods archaic· Pinch grafts are mentioned to be condemned because they ruin the donor area. If a great deal of skin is necessary the dermatome grafts may be cut up in small pieces and applied as pinch grafts once were. In general, thin grafts take better than thick ones and the end results are almost as good.

There are many ways of applying the dressing to the graft. Personally I prefer sewing a graft in place, applying a tent-type dressing over a thin layer of grease gauze and covering the extremity with a voluminous pressure dressing with splints to maintain the hand in position of function. Five to eight days can elapse before redressing. A further period of protective dressing of a week or so is usually followed by daily baths, application of lanolin and active exercises. Some stiffness is frequently encountered, particularly in the older age groups and this is best combatted by early healing followed by early exercises.

232 Medical Arts Building

Your one-stop direct source for the
FINEST IN X-RAY
apparatus . . . service . . . supplies

DIRECT FACTORY BRANCHES

LITTLE ROCK
2424 Wright Ave. • FRanklin 4-0777

MEMPHIS
778 Madison Ave. • JAckson 5-0526

NEW ORLEANS
7715 Edinburgh St. • AUdubon 7742

RESIDENT REPRESENTATIVES

BATON ROUGE
C. A. EBERSBAKER, 2451 Honeysuckle Ave. • DIckens 2-2308

JACKSON
A. D. MAYO, 209 Conti St. • Phone 6-2318

Diagnosis of Uterine Malignancy with Emphasis Upon Vaginal Cytology*

TOM D. NORMAN, M.D., and JOHN E. LINDLEY, M.D.†
Jackson, Miss.

With our present knowledge of uterine malignancy it is apparent that early diagnosis is the greatest single factor promoting a more favorable prognosis. Therefore, it is the responsibility of every physician to utilize all available means for the earliest possible detection of cancer of the uterus. It is the purpose of this communication to emphasize the indications, technique and significance of our presently available detection methods.

Recent developments indicate that cytologic studies of body fluids and scrapings are of considerable help in the detection of early cancer. Thus far the most promising application of this technique has been in the study of vaginal and cervical smears for the presence of cells which may suggest a malignant neoplasm of the internal female genitalia.

The potentialities in this method have been dramatically illustrated in a study of the women of Memphis and Shelby County, Tennessee[1]. As a result of the first examination of 108,000 women, 373 invasive uterine cancers, 20 nonuterine cancers, and 393 intraepithelial carcinomas of the cervix were diagnosed from a total of 1,453 patients in whom biopsy was recommended. The reduction of the incidence of cancer of the cervix from 0.31 per cent of the women in their first examination to 0.030 per cent of the women examined a second time (approximately one year later) provides some assurance that this common cancer can be almost completely eradicated.

It must be emphasized that cytologic methods are not substitutes for biopsy. The results of such studies do not provide a diagnosis but do designate the patients in whom the conventional methods of tissue study should be initiated.

The success of the cytologic method depends upon a properly prepared smear. The obviously unsatisfactory smear can be discarded and a repeat requested with nothing lost other than considerable effort and time on the part of patient and physician. A more serious situation is that of the smear which is borderline in quality; reliance upon such smears no doubt increases the chance of error, especially of the false negative type, and may be responsible for unnecessary diagnostic procedures or a false sense of security on the part of physician and patient.

INDICATIONS FOR VAGINAL CYTOLOGIC STUDIES

The term cytology generally refers to exfoliative cytology or the morphologic study of cells which have sloughed from the surface of various organs. Vaginal cytology is usually understood to be such a study of cells which have sloughed from the lining surface of any of the internal female genitalia to rest in the pool of vaginal secretions, as well as those cells which can easily be scraped or aspirated from the cervix.

Vaginal cytologic study is helpful as a part of the evaluation of the individual patient as well as a procedure for screening the general adult female population. In each patient it is well that the physician recognize which of these purposes is his prime objective.

A vaginal smear is obviously unnecessary in the evaluation of a patient with a gynecologic history explained by the presence of a lesion on the cervix which by palpation and inspection appears to be carcinoma; an adequate biopsy should prove the diagnosis. Furthermore, vaginal smears in such a case actually may be misleading because of the high percentage of false negatives in large lesions with surface necrosis and infection. It should be emphasized that negative smears in patients with such lesions have no significance.

A more complex problem as to the value of vaginal smears is presented by the patient with gynecologic complaints indicative of a malignant neoplasm but without a grossly visible lesion. Such a patient must have cervical or endometrial tissue studies or both. Before these studies are undertaken valuable information may be gained by doing vaginal smears, since positive cytologic studies would force the investigation to a completeness that otherwise might not be achieved. Thus if the solitary or 4-point cervical biopsy was not consistent with the cytologic findings, more extensive tissue studies would be imperative. The characteristics of the abnormal cells may also point to the location and type of the malignancy. All of this by no means changes the fact that a negative smear is of no significance in the face

---

†Departments of Pathology and Obstetrics and Gynecology, University of Mississippi Medical Center, Jackson, Miss.

of gynecologic symptoms suggestive of cancer; such cases should have complete investigation with the utilization of such biopsy procedures as seem necessary.

Cytologic study of the female genital tract serves its best function as a screening procedure, to point the finger of suspicion at the seemingly well woman. It selects the patient who needs tissue studies in order to establish a diagnosis. The gains to be made in the large-scale application of this method are obvious from the Memphis study[1].

PREPARATION OF VAGINAL SMEARS

As yet no completely satisfactory method has been worked out for the patient to make her own vaginal smears, the procedure being necessarily performed by the physician or his trained assistant. The techniques are simple, but a little care at a few critical points pays great dividends in good results.

The sample for the smear is obtained either from the vaginal pool of secretions in the posterior fornix or directly from the cervix. The selection of one of these sites is presently a matter of preference of the individual physician; since two smears are usually made from each patient, many physicians prefer to obtain a smear from both the vaginal pool and the cervix. It may be added that even the most intelligent patients should be cautioned against using a douche before the sample is to be collected and that the smears should be made before lubricating jelly is introduced into the vagina.

The technique for the preparation of smears from the vaginal pool has been simply outlined by the members of the staff of the Vincent Memorial Laboratory[2]. Materials necessary are:

1. A slightly curved glass pipette with a small opening opposite the end provided with a small rubber bulb.
2. Clean glass slides marked by a diamond pencil with the patient's name.
3. A container (preferably Coplin type) containing equal parts of 95 per cent ethyl alcohol and ether.
4. Paper clips (if the container used is not grooved to hold the slides).

The tip of the pipette is introduced into the posterior fornix of the vagina with the bulb compressed, and the material is aspirated. After removing the pipette from the vagina, a small amount of material is expressed on the slide (or slides), spread evenly and thinly by rotating the end of the pipette, and the slide immediately placed into the container of fixative. A paper clip on the end of the slide will help separate the slide from others if the container is not grooved on the sides to hold the slides in place.

The importance of immediate fixation cannot be overemphasized; the material must not be allowed to dry. It is essential that the pipette and slides be dry and clean before use. The material should be present in a thin film over almost all of the width of the slide and two-thirds of its length. A second slide can be used for spreading, but the end of the pipette appears to be better for this purpose.

In obtaining specimens from the cervix either a scraping from the os and adjoining mucosa or an aspiration of the os can be done. Cervical scraping is facilitated by the use of a tongue blade shaped on a concave curve at one end so that it will fit the cervix with one edge in the os; the specimen is collected by rotating the spatula around the cervix. The collected material can then be smeared evenly over the slide and the slide immediately placed in the fixative solution.

Aspiration of the cervical os may also be utilized for cytologic study. The bulb and pipette described above can be used for this purpose, as can a syringe with a plain glass tip (a suitable adapter on any syringe will also suffice). The aspirated material should be placed immediately upon the slide, spread with the tip of the instrument, and the slide placed in the ether-alcohol solution. The aim of this method is to obtain material from the region of the ecto-endocervical junction and the endocervix, the sites most likely to give rise to cervical carcinoma.

TRANSPORTATION OF SMEARS TO THE LABORATORY

It seems clear at this point that the interpretation of cytologic preparations can be made only by those well trained for the cytologic method. In general this has meant that the work is done by a pathologist, often with the help of a cytology technologist who does the time-consuming screening of the smears, saving only the suspicious or positive smears for the personal attention of the pathologist. When the services of a pathologist or other physician judged to be capable of evaluating cytologic preparations are nearby, the smears can be taken to the laboratory without being removed from the fixation solution.

In the event that they must be mailed to the laboratory for examination it is highly desirable that the slides not be allowed to dry when removed from the fixative solution. A method which has given fairly satisfactory results employs a thin coating of glycerin over the smear; a second slide over the glycerin completes the preparations for packaging. The smear must remain in the fixative (ether-alcohol) solution for at least 30 minutes; it may be left there for many hours or days without harm.

Papanicolaou's recently described method[3] for protection in mailing utilizes a film of Diaphane (Will Corporation, Rochester, New York), a synthetic resin. The fresh smear is covered by a small quantity (approximately 0.25 or 0.5 ml.) of a solution of 3 parts of 95 per cent ethyl alcohol to 2 parts of Diaphane. When the solution dries it forms a hard film and the slides can be wrapped in waxed paper for mailing. The authors caution that the film may be opaque instead of clear if there is much water in the specimen; such smears should be dehydrated in 95 per cent alcohol for 1 or 2 minutes before Diaphane solution is added. Puckett[1] is enthusiastic in his support of this technique.

SIGNIFICANCE OF ABNORMAL CELLS

Cytologic studies are ordinarily reported as positive, suspicious, or negative for malignant cells. These categories are frequently further divided into the Papanicolaou classes, I through V: Class I when no atypical cells are present (negative), Class II when slightly atypical cells are present (negative), Class III in smears which have atypical cells suggestive of cancer (suspicious), Class IV when there are cells definitely indicative of cancer (positive), and Class V categorizing those smears which are even more indicative of a malignant neoplasm (positive).

The patients with Class I smears need only to be told to return annually for studies by this method. Those with Class II smears should have further cytologic investigation either immediately or in the near future; admittedly the significance of this category will vary somewhat with the criteria used by different pathologists.

A report of a Class III, IV, or V (suspicious or positive) on a smear indicates that the patient should have very careful study of the cervix and endometrium by cervical biopsy, cold-knife conization of the cervix, or endometrial biopsy or curettage; all of these procedures may be necessary to evaluate the individual patient. A report of unsatisfactory of course means that the smears should be repeated.

CERVICAL PUNCH BIOPSY

The simplest procedure for evaluation of the patient who has a suspicious or positive vaginal smear is the cervical punch biopsy. The site at which these punch biopsies are taken is quite important, as is the number. It is generally recommended that at least four bites be taken along the squamocolumnar junction of the cervix (Fig. 1), including as much of the endocervix as possible. As indicated elsewhere the cervical punch biopsy is still the procedure of choice when a visible lesion or erosion is present; therefore careful inspection of the cervix is mandatory and an erosion should be considered malignant until ruled out by multiple punch biopsies. Pregnancy is no contraindication. The only possible exceptions to this rule are congenital erosions in children and those in the period immediately postpartum when the patient is to be observed further. It is impossible to tell by inspection when an erosion is malignant; histologic study is the only final answer. Therefore tissue should always be taken from several areas of any eroded areas, especially at the junction of the erosion with normal appearing epithelium, in addition to the random (4-point) biopsies discussed above.

The popular practice of doing a cervical biopsy and immediately cauterizing the cervix should be condemned since the patient may need further investigation by a cold-knife conization. In such a case the pathologist is placed at a great disadvantage in having to examine tissue that has been recently cauterized. The best rule is to do the biopsy and defer cauterization until the pathologic report is known; in the meantime a bacteriostatic suppository or cream may be used to curb infection at the biopsy sites.

COLD-KNIFE CONIZATION OF CERVIX

It is important to distinguish between intraepithelial carcinoma and invasive carcinoma since their treatment is quite different; thus a pathologic report of intraepithelial carcinoma (carcinoma in situ) on tissue removed by cervical punch biopsy demands further diagnostic study by a cold-knife conization of the cervix. This type of cervical biopsy is also of much help in the evaluation of the cervix of a patient with suspicious or positive cytologic studies and in whom the 4-point cervical biopsy tissue has no epithelial changes, has only atypical epithelium or is of equivocal significance. When such a cone specimen is obtained the pathologist is presented with the entire circumference of the squamocolumnar junction of the cervix; the histologic interpretation is also more accurate because of the absence of heat effect.

Cold-knife conization of the cervix consists of removing with a scalpel a cone-shaped piece of tissue which includes the entire circumference of the squamocolumnar epithelial junction, a narrow

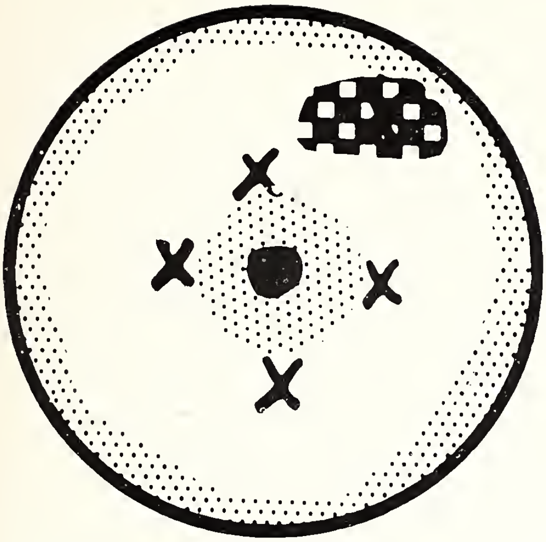


Fig. 1. Sites for cervical punch-biopsy. The 4 points for empirical biopsy at the squamocolumnar junction are indicated by X's; these biopsies should include as much of the adjacent endocervix as can be obtained. Ulcerations of the mucosa, as illustrated by the checkered area, should also be biopsied.

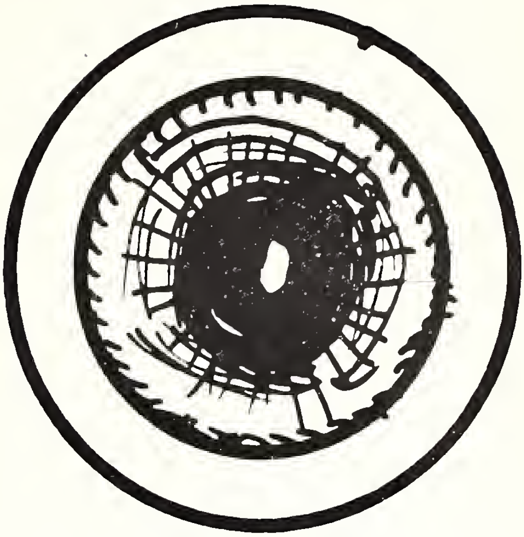


Fig. 3. Cervix as it appears after cold-knife conization.

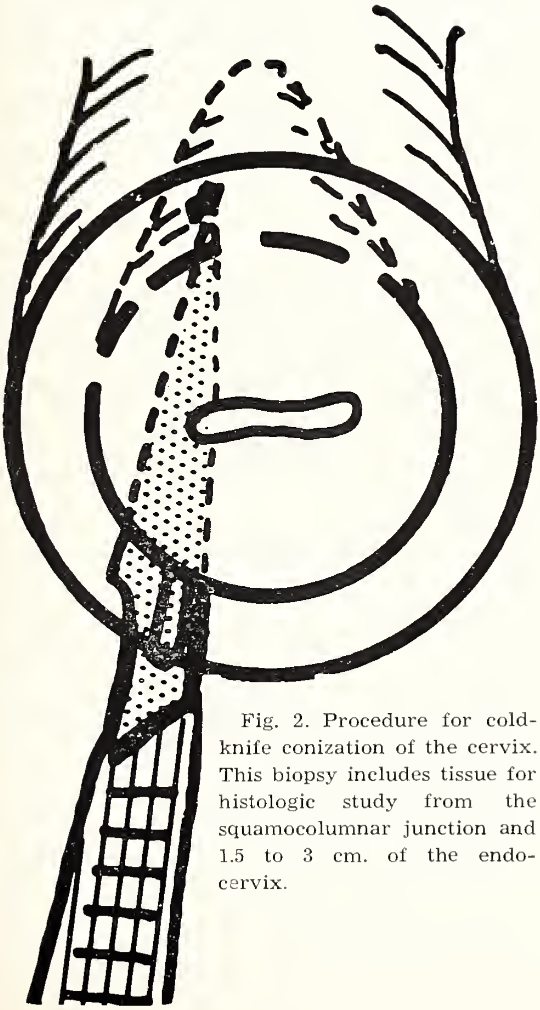


Fig. 2. Procedure for cold-knife conization of the cervix. This biopsy includes tissue for histologic study from the squamocolumnar junction and 1.5 to 3 cm. of the endocervix.

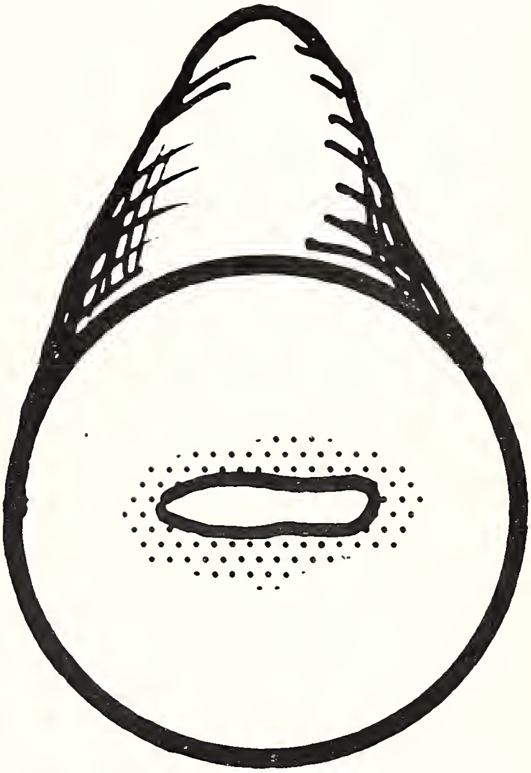


Fig. 4. Cone-shaped specimen removed from the cervix.

margin of the adjacent ectocervix, and 1.5 to 3 cm. of the adjoining endocervix[5]. This procedure requires adequate anesthesia and should be done in the operating room. The cervix should be cleansed gently to avoid damage to the superficial cells. Sutures of No. 1 or 0 catgut, placed in each side of the cervix near the vaginal angle, will control bleeding as well as aid in traction of the cervix. Figure 2 demonstrates how the cone-shaped piece of cervix and endocervix is excised with a scalpel fitted with a Bard-Parker No. 11 blade. The appearance of the cervix after the specimen is removed is shown in Figure 3; the specimen is illustrated by Figure 4. More adequate pathologic studies can be made of the specimen if it is opened and pinned out flat. Excess bleeding is usually controlled by the lateral sutures; however, a cautery may be used once the specimen has been removed. A small vaginal pack with bacteriostatic cream may be left in place for about 24 hours.

ENDOMETRIAL BIOPSY AND CURETTAGE

A positive vaginal cytologic study which is not explained by the results of a cervical biopsy is an indication for endometrial biopsy or curettage. If the latter is decided upon it should be done immediately following a cervical conization; if endometrial biopsy is decided upon it should be followed by cervical conization and endometrial curettage should it not explain the abnormal cells. In general an endometrial curettement should be done in any patient undergoing cervical conization. The patient over 35 years of age who has irregular uterine bleeding with negative cytologic studies and no pathologic changes in the cervix also needs further evaluation of the endometrium: an endometrial biopsy is adequate if it explains the bleeding, but a curettage is indicated if it does not.

The method of endometrial biopsy using a Randall endometrial curette has been proved to be about 90 per cent accurate for the diagnosis of endometrial carcinoma. This is a simple technique that can easily be performed in the office and causes only slight pain if done rapidly. The position of the uterus is first determined by pelvic examination. After the cervix is cleaned it is grasped with a single-toothed tenaculum. The biopsy curette is gently inserted until the fundus is reached and then the cutting edge of the curette tip is brought down the inside of the uterus with a firm even movement. This is rapidly repeated in all areas of the circumference of the uterus. The specimen accumulates in the handle of the curette and is removed simply by forcing air through the proximal end with a glass syringe, thus blowing the specimen into the formalin solutions. An adequate specimen will be a long worm-shaped piece of tissue.

When further endometrial study is indicated, a fractional curettage should be done. By keeping the scrapings from the endocervix and the corpus of the uterus separate, the physician is able to locate more accurately the site of the malignancy.

SUMMARY

Vaginal cytologic studies are of great value in early detection of uterine malignancy. Smears can be prepared from the vaginal pool, the cervix, or endocervix by aspiration or scraping. Slides and other materials used must be clean and dry. Proper spreading of the material upon the slides and immediate fixation in ether-alcohol is essential. If the slides are to be mailed, preservation of the smears by glycerine or preferably Diaphane is necessary to prevent drying of the material.

Actual diagnosis of cancer of the uterus is still dependent upon material from cervical biopsy, cervical conization, endometrial biopsy, or endometrial curettage, or various combinations of these procedures. The tissue must not be damaged in any way if an accurate histologic evaluation is to be obtained.

REFERENCES

1. Erickson, C. C., and others: Population Screening for Uterine Cancer by Vaginal Cytology, J.A.M.A., 162:167-173, 1956.
2. Members of the Vincent Memorial Laboratory Staff: The Cytologic Diagnosis of Cancer, 1950, W. B. Saunders Co., Philadelphia.
3. Papanicolaou, G. N. and Bridges, E. L.: Simple Method for Protecting Fresh Smears from Drying and Deterioration During Mailing, J.A.M.A. 163: 1330-1331, 1957.
4. Puckett, T. F. (personal communication).
5. Scott, R. B. and Reagan, J. W.: Diagnostic Cervical Biopsy Technique for the Study of Early Cancer. J.A.M.A. 160:343-347, 1946.

To be trusted is a greater compliment than to be loved. —*George MacDonald*

Operative Cholangiography

THOMAS G. BARNES, M.D., F.A.C.S.
Greenville, Mississippi

All of us who do biliary surgery are confronted each time we perform a cholecystectomy for cholelithiasis with the question, "Are there common duct stones present which I cannot palpate?". In an effort to answer this question, Cotté in 1929 devised an accurate and dependable method for examining the common duct which he termed an operative cholangiogram. He injected an iodized oil into the common duct and a roentgenogram was made immediately.

Originally, with the inferior equipment that existed in his day, the films were not satisfactory and as a result the technique was not generally accepted. However, with modern equipment and methods, most of the original difficulties have been overcome. With cooperation among the anesthetist, x-ray technician, and surgeon, cholangiograms of good quality can now be obtained easily and almost routinely. Without such films, the radiologist can not make his interpretation with a high degree of accuracy[1]. Various authors have reported the incidence of common duct stones remaining after gallbladder surgery to be between two and twenty-six percent. It is generally accepted that the most important way of preventing residual common duct stones is a skillful exploration of the common duct in all cases in which the usual indications for common duct exploration exists. It is not the intent of this article to relay the opinion that the operative cholangiogram is the sole answer in preventing residual common duct stones but it is the intent to emphasize its effectivness in combination with the usual surgical skills in lowering the incidence of residual stones. It is a known fact that even after cholangiograms an occasional stone will be overlooked in the common duct but it is the hope that through the routine use of operative cholangiography that the incidence of residual common duct stones may be sufficiently lowered to justify its use. We will attempt to prove this point by two case presentations.

TECHNIQUE

The patient is carefully placed upon a Liebel-Flarsheim bucky on the operating table so that the common duct will be centered and a scout film is made.

General anesthesia is used in practically all of our cholecystectomies. After the abdomen has been opened through an upper right rectus incision, the gallbladder is palpated and a thorough systematic exploration of the peritoneal cavity is carried out. Any adhesions around the common duct are freed and the common duct is carefully visualized for dilatation and is palpated for stones. The ampulla of Vater is palpated and, if this is unsatisfactory due to the immobilization of the duodenum, a modified Kocher maneuver is carried out to mobilize the duodenum so that the ampulla can be more adequately palpated.[1] The cystic duct and the cystic artery are then isolated. A ligature is then passed around the cystic duct at its junction with the gallbladder and tied to prevent a reflux of the contrast media into the gallbladder. Then a small opening is made through the anterior wall of the cystic duct and a Number 21 polyethylene tube, whose lumen is freed from air, is threaded into the cystic duct and for a short distance into the common duct. This is secured with a ligature around the orifice of the cystic duct so as to prevent any leakage of the contrast media into the operative field. Following this, all packs and retractors are removed from the wound. A syringe containing 15 cc. of 30% Urokon is connected to the polyethylene tube and the surgeon slowly begins to inject the contrast media. An x-ray casette is placed in the Liebel-Ffarsheim bucky beneath the patient The anesthetist hyper-ventilates the patient by bag breathing and then at a signal given by the anesthetist the x-ray technician is developing the film, steps are then carried out for the removal of the gallbladder unless some contraindication exists. By the time the gallbladder has been removed and the serosa of the gallbladder bed is closed, the x-ray film has been surveyed by the roentgenologist. Usually this takes in our operating room about ten minutes. If there is no evidence of any stone in the common duct, then the operative procedure is terminated. However, if there is any suspicious area within the common duct which we might feel represents a stone then a choledochotomy is carried out. After the common duct has been thoroughly explored and any stones removed, a T tube is then placed in the common duct and sutured into place and another cholangiogram is taken with injection of the dye through the T tube. The operative procedure is not prolonged for any

---

*Presented before the Section on Surgery at the eighty-ninth annual session of the Mississippi State Medical Association, May 14-16, 1957, Biloxi, Miss.

appreciable time by the use of operative cholangiography.

CASE HISTORIES

Case No. 1

Mrs. E. L. R., K. D. H., Hospital No. 65614, fifty-two-year-old white female. This fifty-two-year-old white female was admitted to the hospital in July 22, 1956 with the chief complaint of "pain in my stomach". Present illness began four weeks prior to admission at which time she was operated upon in another hospital and a gangrenous gallbladder was found. Many small stones were removed and a cholecystostomy performed. Her post-operative course was uneventful. She was discharged from the hospital and on July 17th was readmitted with severe right upper quadrant pain, nausea and vomiting, and chills and fever. No improvement was noted under conservative therapy and she was transferred to Greenville. On admission she stated that she was having severe right upper quadrant and epigastric pain which radiated trans-abdominally into the lumbar region. There was marked nausea and vomiting. She had had chills and fever for the past three days. She stated that her stools had been normal brown in color. Her urine had been dark golden in color. There was no itching, no abdominal distention. The pain was constant. Her bowels had moved daily. Her past history, family history and systemic review were all non-contributory. Physical examination revealed a well developed, well-nourished fifty-two-year-old white female moderately obese, appearing acutely ill. Temperature on admission was 100 degrees Fahrenheit. Head and neck were negative with the exception of an icteric tint to the sclerae. The positive physical findings were limited to the abdomen where a well healed recent right upper quadrant scar was present. There was marked tenderness with severe muscle spasm in the right upper quadrant. When palpated this radiated into the inter-scapular region. No masses were felt. Peristalsis was high pitched. The skin of the abdomen was slightly yellow in color. The initial impression was acute cholecystitis with cholelithiasis and choledocholithiasis. Her laboratory work on admission revealed a hemoglobin of 12 grams, red count of 4,240,000, a leukocyte count of 10,800 with 90 neutrophiles, 8 lymphocytes and 2 monocytes. The urinalysis was negative with the exception that bile was present. The icteric index was 37.6. The serum amylase was 42 Mullengrat units. Sodium was 143 milliequivalents, potassium 3.9 milliequivalents, chlorides 420 mk. %, prothrombin time 20 sec., blood urea nitrogen 12.5 mg. %. The patient was hydrated with intravenous fluids. A Levine tube was passed and under pentothal sodium nitrous oxide and ether anesthesia on July 25, 1956 the abdomen was opened through an upper right rectus incision. The peritoneal cavity was entered. Dense adhesions between the omentum and duodenum were found around the gallbladder. These were freed by sharp dissection. There was much edema present around the gallbladder. No stones could be palpated either in the gallbladder or in the common duct but there was so much induration and edema that one could not be sure that a common duct stone did not exist. The common duct measured two centimeters in diameter. The gallbladder was markedly inflamed and had a thick edematous wall. By means of sharp dissection, the cystic duct and cystic artery were isolated. The cystic artery was clamped, cut and tied with 00 chromic catgut. The cystic duct was stripped.[2] An opening was made into the duct and a polyethylene tube was threaded down into the common duct and an operative cholangiogram was performed which showed marked dilatation of the common duct and the hepatic ducts. No dye flowed into the duodenum and a stone could be seen which was impacted in the ampulla of Vater. Following this the gallbladder was removed. After the duct had been ligated, the common duct was then exposed and an opening made through the anterior wall and immediately golden bile gushed from the wound. The duct was thoroughly probed and scoops were inserted. The duct was irrigated with saline. No stones could be removed nor did we have any evidence that a stone was present. A Number 10 soft rubber catheter was inserted which passed easily into the duodenum and when aspirated duodenal contents were observed in the syringe which proved that the catheter was easily passed into the duodenum. Because the stone could not be disengaged through the common duct, a transduodenal choledochotomy was carried through the common duct, a transduodenal choledochotomy was carried out and as soon as the ampulla of Vater was visualized transduodenally, a one centimeter soft cholesterin stone could be seen protruding through the ampulla. This was then easily removed and following this the duct was again thoroughly explored with probes and scoops. No other stones could be detected. The wound in the duodenum was closed. A T tube was inserted into the common duct and the opening closed and another cholangiogram[3] performed at this time which revealed adequate passage of the dye into the duodenum without any evidence of obstruction.

DISCUSSION

In the case presented above, there is mute evidence that if a cholangiogram had not been performed the possibility exists that we would have closed the patient without doing a transduodenal choledochotomy. This emphasizes the point that one can explore the common duct and pass a small catheter by a stone which is impacted into the ampulla of Vater and on into the duodenum. Many of us might have felt that if a cholangiogram had not been performed here that the common duct obstruction was due to an inflammatory process with marked edema and recent adhesions produced an inflammatory stricture of the common duct which in turn produced the obstructive jaundice. I know of two cases in my own experience prior to the use of cholangiography where an impacted stone in the ampulla of Vater was overlooked and a secondary operation had to be performed later for the removal of this stone. This case in itself is enough proof to champion the cause for operative cholangiography.

CASE NO. 2

Mrs. C. M. I., Hospital No. 64885, fifty-six year old white female. This patient was admitted to the hospital on August 3, 1956 with the complaint of "pain in my stomach". Present illness: In July 26, 1956 this patient consulted another doctor with the complaint of moderate right upper quadrant pain of several weeks' duration. The patient was studied and a gallbladder examination was performed which revealed a non-functioning gallbladder without any radiographic evidence of stones. A cholecystectomy was recommended at this time but was refused by the patient. The patient was quite well up until nine o'clock on the night of August 2, 1956 at which time she developed a sudden severe pain in the right upper quadrant which radiated along the right subcostal margin into the interscapular region. This was followed with chills and fever, marked nausea and vomiting. The pain progressed during the night but on the morning of August 3, 1956 it subsided somewhat about 8 A.M. However, during the morning the pain became much more severe and she became nauseated and vomited copious amounts of bile stained fluid. She had had no other attacks of chills and fever. There had been no evidence of jaundice. Her stools had been brown, the urine had been normal yellow in color. There had been no weight loss. Past history, family history and systemic review all were negative. Physical examination revealed a well developed, well nourished, moderately obese white female in acute distress. Temperature was 100. The positive physical findings were limited to the abdomen. A well healed lower right rectus scar was present. There was marked tenderness with early muscle spasm in the right upper quadrant. When this region was palpated, pain could be reproduced in the lumbar region. There was a questionable tender mass in the right upper quadrant. Laboratory tests revealed a hemoglobin of 11.5 grams, erythrocyte count of 4,520,000, leukocyte count 5,950 with 67% neutrophiles, 30% lymphocytes, 2 monocytes and 1 eosinophile. The urine was entirely negative. It was felt that this patient had an acute cholecystitis. She was admitted to the hospital, given 1000 cc. of 5% glucose in distilled water. She was taken to the operating room and under pentothal sodium, nitrous oxide and ether anesthesia the abdomen was entered through an upper right rectus incision. The gallbladder was found to be dilated to the size of a large orange. The wall was edematous, quite tense and there were hemorrhagic areas in the wall of the gallbladder just adjacent to the liver. There was marked edema of the hepatoduodenal ligament and also of the serosa of the gallbladder adjacent to the liver. A purse string suture of 000 chromic catgut was inserted into the fundus of the gallbladder and a trocar aspiration of the gallbladder was carried out with the removal of a large quantity of purulent bile. The hepatoduodenal ligament was then entered. The cystic duct and cystic artery were isolated. The common duct was visualized. It was not dilated. No stones could be palpated and the common duct appeared entirely normal except for the periductal edema. The gallbladder was then re-palpated and was found to contain innumerable stones, 4 to 5 mm. in diameter. The cystic artery was ligated and divided. The cystic duct was opened[4], a polyethylene tube inserted and an operative cholangiogram was performed with the visualization of one small stone present in the common duct. The gallbladder was then removed, the common duct opened and a 5 millimeter stone was engaged with a scoop and removed from the common duct. The duct was irrigated with saline. A catheter was passed through the sphincter of Oddi and into the duodenum[5]. A T tube was inserted into the common duct and a repeat cholangiogram was performed which revealed no evidence of stones. The dye passed easily into the duodenum. A drain was inserted into the foramen of Winslow and the abdomen closed in layers.

DISCUSSION

In view of the negative palpatory findings, as well as the fact that no dilatation of the common duct was detected and no other indications for exploration of the common duct were present, this patient's common duct would not have been explored if we had not performed an operative cholangiogram with the demonstration of the stone in the common duct. It is impossible for any of us to say whether this stone would or would not have passed through the Sphincter of Oddi postoperatively. We do know that stones of this caliber have passed successfully through the sphincter of Oddi without producing any obstruction, but who are we to decide as to whether a stone will or will not pass through the small ampulla? Again it is felt that this case is sufficient evidence to warrant routine operative cholangiography.

SUMMARY

It is our feeling that the following criteria should be adopted in regards to the use of cholangiography.

(1) Operative cholangiography should be done in all cases of cholecystectomy in which there are none of the usual indications for common duct exploration. By such procedure, otherwise unsuspected common duct stones will occasionally be revealed.

(2) Operative cholangiography should be done in cases in which the indications for common duct exploration are slight or borderline to determine the need for such exploration and in poor risk patients in order to avoid choledochostomy, if possible.

(3) Careful exploration of the common bile duct should be done in each case in which definite indications for this procedure exist. An exception may be made in poor risk patients in whom cholangiography has shown the ducts to be clear.

(4) Exploration of the common bile ducts should always be followed by an operative cholangiogram performed through the T tube.

(5) A post-operative cholangiogram should be done in each case before the T tube is removed[2].

BIBLIOGRAPHY

1. Hight, Donald, and Lingley, J. R.: The Value of Cholangiogram During Biliary Tract Surgery; New England Journal of Medicine, 246:761, 1952.
2. Sullins, W. E., and Sexton, G. A.: Indications For the Use of Operative Cholangiography; Annals of Surgery, 141:499, 1955.

DISCUSSION

Dr. Walter T. Colbert, (Natchez) — There is little that can be added to the excellent paper that has been delivered here this morning. However, I would like to point out that the x-ray equipment manufacturers are now preparing 200 MA portable machines which will vastly improve the technical quality of our operating room work. This equipment will make it possible to use the bucky grid and still use extremely short times, of the order of one-fifth of a second.

One of the bugbears of operative cholangiography is the presence of artefacts, almost exclusively gas bubbles. For that reason we usually make two exposures on each examination separated by a short interval of time. This usually gives a different gastric distribution of gas bubbles if any are present.

So as not to leave the impression that this is an entirely safe procedure we have had the misfortune of producing one or two cases of pancreatitis following cholangiography.

ABARS PHARMACEUTICALS

FIRST MISSISSIPPI - OWNED ETHICAL PHARMACEUTICAL COMPANY

ANNOUNCES THE OPENING OF OFFICES AND SALESROOMS

SUITE 101 - 102 MEDICAL ARTS BUILDING

North State Street

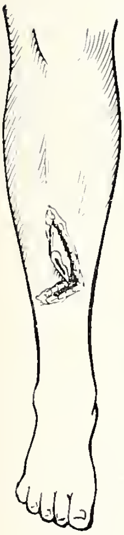
JACKSON, MISSISSIPPI

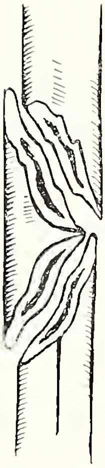
March 15, 1958 Telephone 3-6651

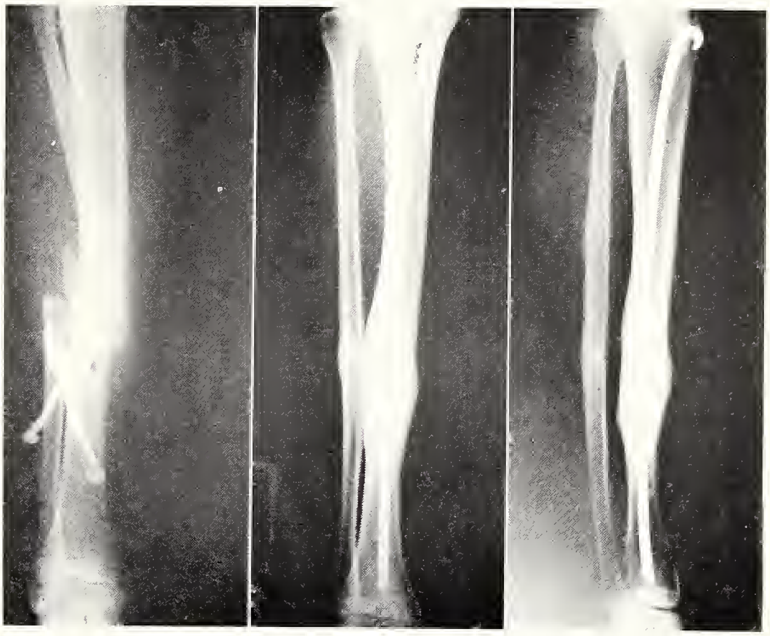
Fracture Problems

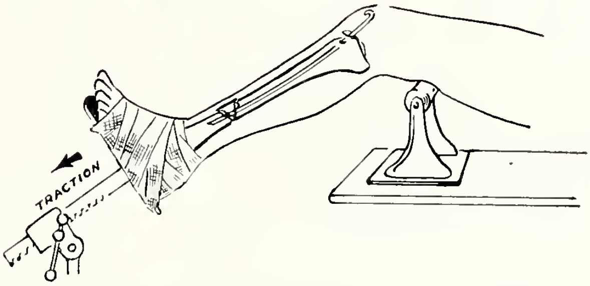
Leslie V. Rush, M.D.
Meridian, Miss.

Problem No. 13 of a Series







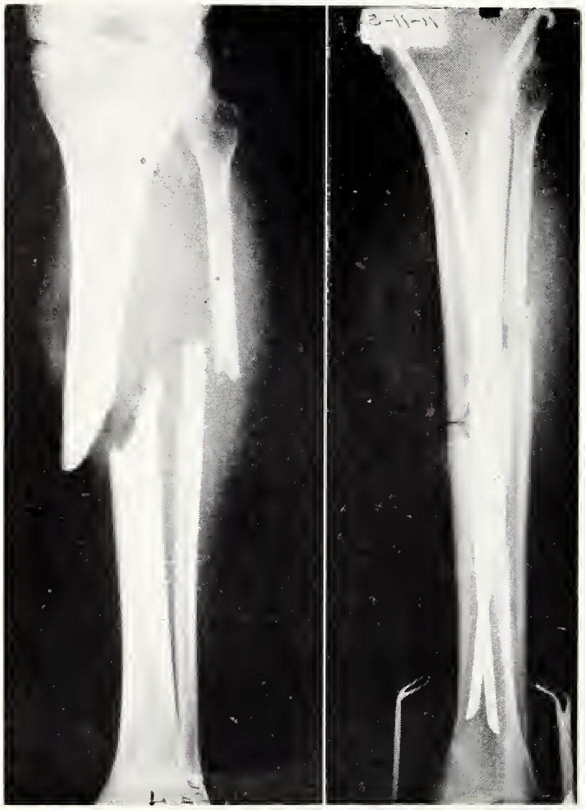


COMPOUND COMMINUTED TIBIA

Male, age 20. Primary healing following débridement and pinning of tibia. (Please forgive the crossed nails in the preoperative film—they were in the board splint patient was wearing.)

The Rush Pin is 1/4 inch diameter, which was given a slight curve with the bending irons. The countersupport afforded traction in physiologic position and simplified x-rays.

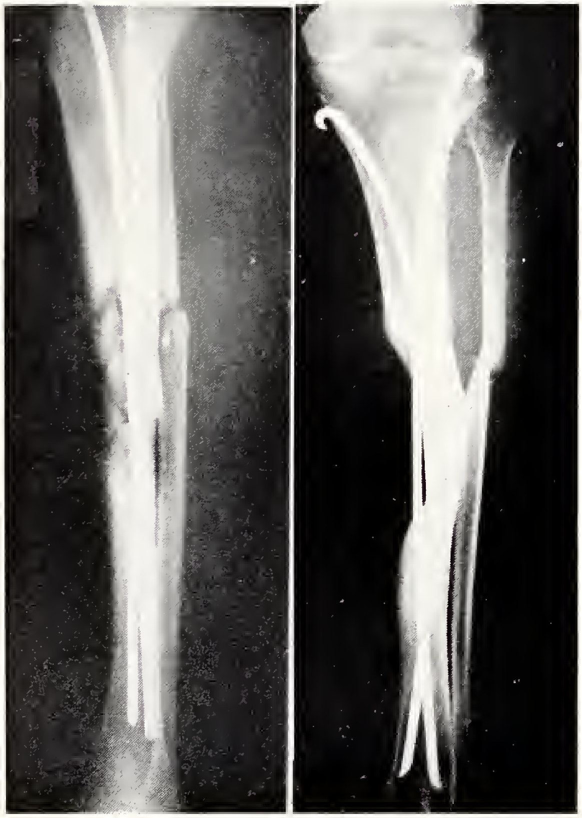
The comminuted fragment, being a ring, locked securely in position making tibia stable despite the fractured fibula.



COMPOUND COMMINUTED TIBIA WITH INFECTION

PROBLEM No. 14

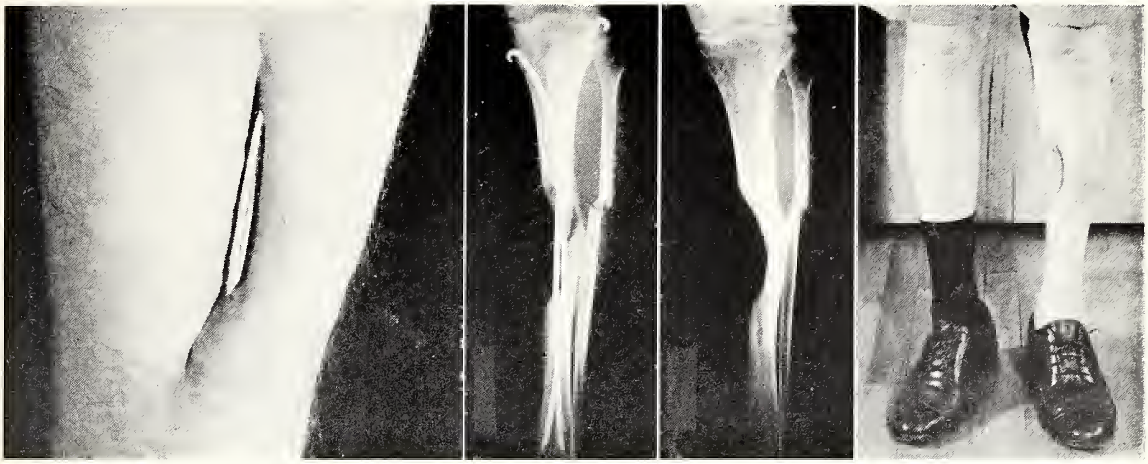
Male, age 45. Double pins 3/16 inch diameter gave good fixation. Pins were straight when driven but heads were stress relieved.



Sequestrum

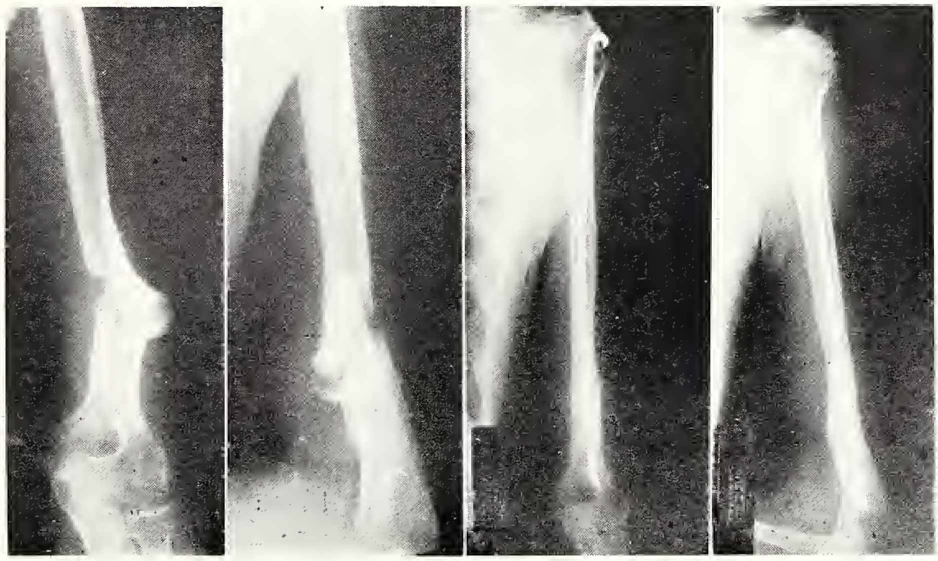
After few months, large sequestrum developed. Treated by saucerization and wounds packed open. This left both pins exposed in hiatus.

Short leg KES dressings used and changed weekly until wound healed.



COMPOUND COMMINUTED TIBIA WITH INFECTION (Cont'd.)

Exposed pin tolerated for many months until good bone bridging occurred. Chip grafts to defect and plastic on scar recommended but refused by patient.



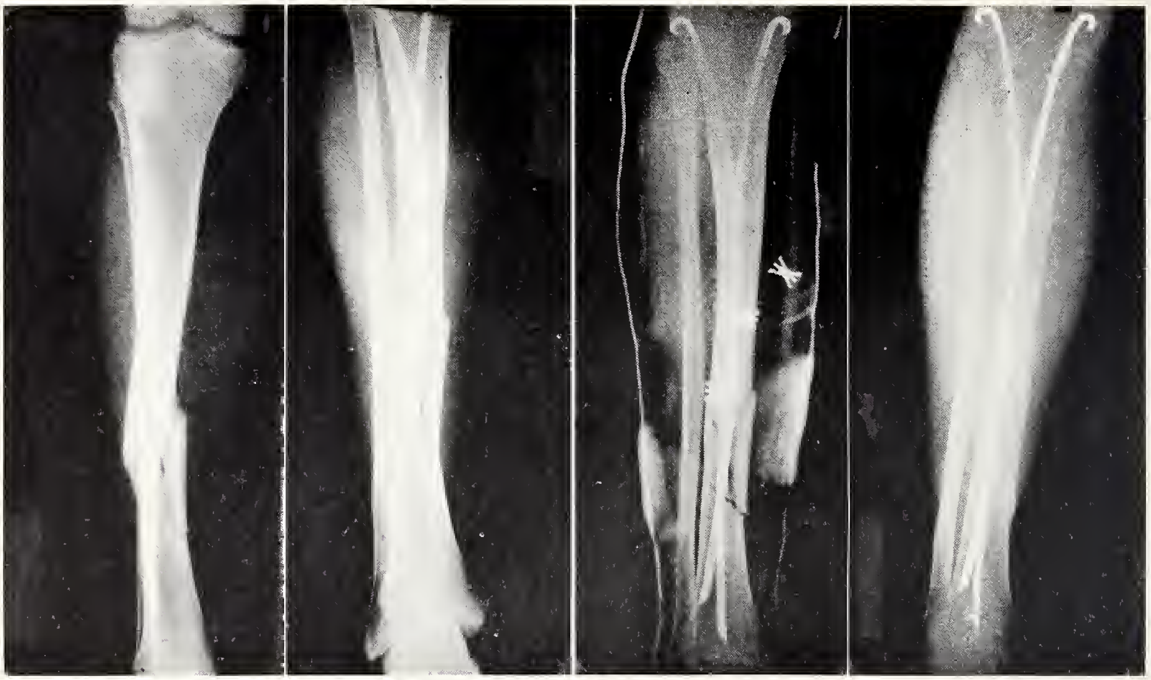
PSEUDOARTHROSIS HUMERUS

PROBLEM No. 15

Male, age 37. Three-year-old non-union following comminuted fracture.

Bone ends were freshened. Medullary canal drilled in distal fragment using 3/16 inch diameter placed through opening in side of greater tuberosity. Barrel stave iliac grafts placed about fracture.

Very light hanging cast worn for six months, being occasionally removed for exercise of elbow.



COMPOUND TIBIA, MULTIPLE FRAGMENTS

Problem No. 16

Male, age 20. Open fractures of tibia extending over 4 inches of shaft. Head of fibula comminuted.

Primary healing without deformity followed débridement, double pinning of tibia with immediate wound closure.

Fixation was surprisingly stable. Removable lateral plastic splints worn 6 weeks. Pins removed at end of fifth month.

Note: Similar technic is applicable to comminuted fractures of lower femur shaft. Proper use of double curved pins will maintain bone length.

If instead of a gem or even a flower, we should cast the gift of a loving thought into the heart of a friend, that would be giving as the angels give. —George MacDonald

PROGRAM

Annual Meeting — Mississippi State Medical Association

MAY 13, 14, 15, 1958 — JACKSON, MISSISSIPPI

SECTION ON MEDICINE

Rose Room, Tuesday, May 13, 2:00 p.m.

Ira B. Bright, M.D., Chairman

E. Leonard Posey, Jr., M.D., Jackson—"Esophagitis"

Leon Lenoir, Jr., M.D., Greenville—"Diagnosis and Treatment of Headaches"

Thad D. Labecki, M.D., Jackson—"The Present Status of the Antiatherogenic Agents"

I. Frank Tullis, M.D., Memphis—"Arrhythmias and Cardiac Emergencies"

E. Sterling Nichol, M.D., Miami—"Anticoagulant Therapy in Impending Myocardial Infarction"

SECTION ON OBSTETRICS AND GYNECOLOGY

Wednesday, May 14, 9:00 a.m., Rose Room

Panel, "Resuscitation of the New Born"—Walter H. Simmons, M.D., Jackson, moderator; Frank R. Lock, M.D., Winston-Salem, Kermit E. Krantz, M.D., Little Rock; Michael Newton, M.D., Jackson; Victor C. Vaughan. Augusta; Murdina M. Desmond, Houston

Chester H. Lake, M.D., Jackson—"Indirect Placentography—A Diagnostic Aid in Placenta Previa"

Kermit E. Krantz, M.D., Little Rock—"Use and Abuse of Forceps"

Frank R. Lock, M.D., Winston-Salem—"Indications for Operative Treatment in Gynecology"

SECTION ON OBSTETRICS AND GYNECOLOGY

Wednesday, May 14; Walter H. Simmons, M.D., Chairman

Roundtable Breakfast Discussions—May 14

Eight Roundtable Breakfast Conferences will be held simultaneously. These will begin promptly at 7:25 a.m. and end promptly at 8:40 a.m. Each table will be limited to ten physicians. Price of $1.50 is for the breakfast, including tip. Reservations will be filled in order received prior to the Annual Session by mail from the Mississippi State Medical Association, 735 Riverside Drive, Jackson, and near the Registration Desk, Victory Lounge, The Heidelberg, on Tuesday, May 13.

Roundtable 1, Hotel Walthall, Parlor A, "Premarital Examination and Counseling"—William R. Raulston, M.D., Hattiesburg

Roundtable 2, Hotel Walthall, Parlor B, "Menstrual Irregularities"—John E. Lindley, M.D., Meridian

Roundtable 3, King Edward Hotel, Walnut Room, "Diagnosis and Treatment of Leucorrhea" — I. C. Knox, Jr., M.D., Vicksburg

Roundtable 4, King Edward Hotel, Gold Room, "Induction of Labor"—Daniel R. Thornton, Jr., M.D., Meridian

Roundtable 8, Primos Restaurant No. 3, 416 North State St., Dining Room No. 1, "Cesarean Section"—Clarence G. Sutherland, M.D., Jackson

Roundtable 7, Primos Restaurant No. 3, 416 North State St., Dining Room No. 2, "Use and Abuse of Hormones in Gynecology"—Walter S. Ridgway, M.D., Jackson

Roundtable 6, Primos Restaurant No. 3, 416 North State St., Dining Room No. 3, "Practical Approach to Ovarian Enlargements"—Ross F. Bass, M.D., Jackson

Roundtable 5, Primos Restaurant No. 3, 416 North State St., Dining Room No. 4, "Treatment of Abortions"—Carl E. Lewis, M.D., Jackson

SECTION ON PREVENTIVE MEDICINE

Victory Foyer, Wednesday, May 14, 9:00 a.m., Durward Blakey, M.D., Chairman

Louis F. Rittelmeyer, Jr., M.D., Jackson—"Medicine's Challenge: Aging Population"

John R. Snavely, M.D., Jackson—"Obesity—America's Number One Preventable Disease"

Keith E. Jensen, Ph.D., Montgomery—"Life Among the Flu Viruses: An Adventure in Preventive Medicine"

Fred Allison, Jr., M.D., Jackson—"Recent Advances in the Therapy of Systemic Fungus Infections"

H. C. Ricks, M.D., Jackson—"The Public Health Laboratory Service"

SECTION ON EYE, EAR, NOSE AND THROAT

Victory Foyer, Tuesday, May 13, 2:00 p.m.; D. Cameron Montgomery, Jr., M.D., Chairman

Joseph B. Rogers, M.D., Oxford—"The Ocular Side Effects of Some Systemic Medications"

James W. McLaurin, M.D., Baton Rouge—"The Treatment of External Otitis"

Reuben H. McArthur, M.D., Jackson—"A Problem of Severe Epistaxis"

Alston Callahan, M.D., Birmingham—"Recent Advances in Ophthalmic Surgery"

SECTION ON PEDIATRICS

Victory Foyer, Wednesday, May 14, 1:30 p.m.; L. G. Horn, Jr., M.D., Chairman

Victor C. Vaughan, M.D., Augusta—"A Philosophy of Management of Childhood Allergies"

Murdina M. Desmond, M.D., Houston—"Staphylococci Infections in Early Infancy"

Jesse L. Wofford, M.D., Jackson—"Growth Affecting Postoperative Care"

JOINT MEETING WITH SECTION ON OBSTETRICS AND GYNECOLOGY

Members of the Section on Pediatrics are invited to meet with the Section on Obstetrics and Gynecology at 9:00 a.m., Wednesday, May 14, and remain until 10:15 a.m. when the Mississippi Pediatric Society convenes.

SECTION ON SURGERY

Rose Room, Thursday, May 15, 9:00 a.m.; James D. Hardy, M.D., Chairman

James D. Hardy, M.D., Jackson—"Emergency Surgery in the Acutely Injured." Discussion: Orlando J. Andy, M.D., Jackson; William F. Enneking, M.D., Jackson

Warren H. Cole, M.D., Chicago—"Advances in Cancer Management"

J. Harold Conn, M.D., Jackson—"Femoral Arterial Bypassing for Ischemia: Case Studies"

William O. Barnett, M.D., Jackson—"Intestinal Obstruction: Pathology and Management"

Panel: "Surgical Complications"—Warren H. Cole, M.D., Chicago, moderator; Curtis P. Artz, M.D., Jackson; J. Harvey Johnston, M.D., Jackson; Willard H. Parsons, M.D., Vicksburg; Watts R. Webb, M.D., Jackson; Eustace H. Winn, M.D., Greenville.

Medical Center Miscellany

The nation's 83 medical schools, the medical profession and an interested public will observe Medical Education Week, April 20 through 26.

This third observance has a special significance here since the University of Mississippi has at last taken its place on the list of accredited four-year schools after graduating its first class in 1957.

Mississippians are becoming ever more aware of the role played by their medical school and all such schools in the promotion and maintenance of national health and security.

To encourage such public interest, the University Medical Center is joining with Central Medical Society, its auxiliary and the UMC Student American Medical Association chapter in a series of planned events during April 20-26. Headed by Dr. Louis Rittelmeyer as chairman of the Central Medical Society committee for Medical Education Week, the joint group has scheduled talks to civic clubs and colleges, tours of the Medical Center, radio and television programs and special news articles.

Mississippians will be reminded that its medical school, like those in the rest of the country, is keeping pace with a growing demand for medical care and increasingly complex medical science.

In June, 1958, the University of Mississippi School of Medicine will graduate 44 physicians. It is teaching 253 undergraduate students this year, part of the approximately 30,000 students in the 83 schools.

Additionally, Mississippi's medical school instructs hundreds of graduate doctors, research scientists, nurses, hospital staff members and other students. It provides care for the needy sick and conducts research projects adding up to nearly $400,000 in annual grant support.

The medical schools in this country spent more than $200,000,000 in 1956-57 and costs of supporting their many activities have risen steadily. Only a small portion of the school's operating budgets comes from tuition.

In Mississippi, a requested tax appropriation if approved will provide $4,900,000 for two years' operation of the University Medical Center plus $350,000 for the Department of Nursing. Patient income and tuition will augment this sum but gifts from outside agencies are essential for progress and expansion here or elsewhere.

One source of support for medical schools is the American Medical Education Foundation to which Mississippi physicians are urged to contribute. A second is the National Fund for Medical Education which draws its funds from industry and the Ford Foundation. Both agencies join in the sponsorship of Medical Education Week.

NEUROSURGEONS MEET

Nearly 100 neurosurgeons, members of the 16-state Southern Neurosurgical Society, met in Jackson, March 21-22, for their tenth annual conference.

Opening with a scientific session at the University Medical Center, the meeting was planned by Dr. Charles L. Neill, clinical assistant professor of neurosurgery, and Dr. Orlando J. Andy, professor of neurosurgery, as local chairman.

Except for a paper read by Dr. Louis J. Hurwitz of Belfast, Ireland, the entire Friday morning program was presented by University faculty members.

They were: Dr. Charles L. Neill, "Glomangiomas and Peripheral Neurogenic Tumors as Cause of Pain"; Dr. Marshall Allen, resident, "Effect of Frontal and Temporal Lobe Seizures on Conditioned Behavior"; Ralph McC. Chinn, "Effect of Hippocampal Lesions on Audiogenic Seizures"; Dr. Walter Neill, clinical instructor, "Carotid Ligation in the Treatment of Aneurysms"; Dr. Albert Azordegan, resident, "Cranioplasty with Dental Acrylic"; Dr. J. K. Seale, assistant professor of anesthesiology, "Use of Positive and Negative Pressures in Neurosurgical Anesthesia."

Dr. James S. Browne, assistant professor, and Dr. Robert Henderson, clinical instructor in radiology, "Diagnostic Localization of Intracranial Mass Lesions"; Dr. H. William Gillen, assistant professor of neurology, "Basilar Artery Thrombosis"; Dr. Andy, "Blood Pressure Depressor and Pressor Symptoms in the Temporale Lobe," and Doctors Andy and Browne, "Globus Pallidus Coagulation in the Treatment of Parkinsonism."

INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW

JOSEPH P. MELVIN, Jr., M.D.	Cardiology
HARVEY F. GARRISON, Sr., M.D.	Pediatrics
JAMES D. HARDY, M.D., and STAFF, Department of Surgery, University Medical Center	Surgery

CARDIOLOGY

VALVULOPLASTY FOR MITRAL STENOSIS DURING PREGNANCY

Warren J. Taylor, et al, *Journal of the AMA*
Vol. 166, No. 9, 3-1-58 — Page 1013

The authors, in this paper, attempt to define the indications for valvuloplasty for mitral stenosis during pregnancy, mention points of contraindication, its relative risk and proportionate gain, and most of all, try to measure the risk inherent in medical therapy alone, interruption of pregnancy alone with later valvuloplasty or valvuloplasty alone, with normal conclusion of pregnancy.

The occurrence of pregnancy in a patient with mitral stenosis measurably increases demands on the heart, and in handling this situation, a place definitely exists for medical therapy alone, especially when this therapy can prevent surgery and carry patients safely to term. The big argument seems to be whether therapeutic abortion, with valvuloplasty done at this time or later, is a safer procedure than corrective valvuloplasty with uninterrupted pregnancy. It is interesting and probably predictable that the proponents for hysterotomy interruption of pregnancy are primarily internists and cardiologists and they state that a risk of 15 per cent attends valvuloplasty during pregnancy. The arguments are that, in general, pregnant women who have mitral stenosis do well on medical therapy and that those who would tolerate surgery would probably survive pregnancy on a strict medical regimen. Also, the complexities of the situation of pregnancy plus mitral stenosis are much greater than those of mitral stenosis alone in a non-pregnant state. Valvuloplasty during pregnancy should, therefore, be more hazardous. Finally, the errors in diagnosis which occur during the pregnant state are inherent and no diagnosis of rheumatic mitral stenosis should be made for the first time when a patient is pregnant, due to the alterations in blood flow, blood velocity and blood volume, which can frequently imitate the murmur of true mitral stenosis.

This paper by Taylor presents 27 patients who have had mitral valvuloplasty during pregnancy. Twenty-four of these patients survived and three patients who expired involved the following: The first patient was one in whom mitral stenosis had not been established before gestation and at operation mitral insufficiency was found and not relieved. The patient subsequently died. The second death was due to cerebral embolus the day following valvuloplasty with death one month later. The third death was in a patient with associated aortic disease who developed ventricular fibrillation during operation.

The place for surgical correction for mitral stenosis should be determined:

1) by the response of the congestive failure to strict medical therapy.

2) to the availability to good cardiac surgery.

3) to the definitiveness of the diagnosis of rheumatic mitral stenosis, this diagnosis definitely being made prior to pregnancy before any patient should be considered for surgery.

4) the desire to have a living child.

Comment: When good, dependable cardiac surgery is immediately available and the diagnosis of rheumatic mitral stenosis has been made prior to pregnancy, all patients should be given a thorough and conscientious trial of adequate medical therapy before any surgery is considered. If intractable congestive failure occurs during the first three months of pregnancy and a living child is not earnestly and unanimously desired by both parents, abdominal hysterotomy should be performed with later valvuloplasty. If a child is desired and the probable increased risks of valvuloplasty are presented to the parents, valvuloplasty may be done during this first trimester, if chosen by the parents. These rules may also apply during the fourth month but the dangers of abdominal hysterectomy increase proportionately at this time. At the fifth and sixth month, if intractable congestive heart failure has occurred, the figures show that it is almost a toss-up as to the dangers of abdominal hysterotomy and valvuloplasty alone. Here the desire for a living child overrides all other considerations when the facts are presented to the parents. Past the sixth month, valvuloplasty, of course, should be done and sterilization should be done and sterilization should not be considered as part and parcel of corrective surgery at this time. Most of these women can have living children later on, after the valvuloplasty, without any particular risk.

SURGERY

IMPLANTATION RECURRENCE OF CARCINOMA OF RECTUM AND COLON

LeQuesne, L. P., and Thomson, A. D.
New Eng. J. Med. 258:578-582, Mar. 20, 1958

"It is well recognized that cancer cells implanted onto a raw tissue surface are capable not only of surviving but also of growing and forming a metastatic nodule." With this ominous warning as an introduction, the authors proceed to remind us that malignant cells in the bowel lumen, present either from normal desquamation or from manipulation of the tumor at surgery, are capable of implantation in an anastomotic suture line or any other raw surface. They present three interesting cases to illustrate the theme.

The first case was a 59-year-old white woman who had an adequate resection of her descending colon for an adenocarcinoma. An end-to-end anastomosis was performed· Nine months later at an operation for large and small bowel obstruction, an adenocarcinoma, appearing histologically similar to the original lesion, was found in the anastomosis. Implantation had occurred during the original operation.

The second case was a 47-year-old woman who had a hemorrhoidectomy performed for a history of rectal bleeding of ten years' duration. Sigmoidoscopy had been performed to 15 cm. preoperatively. However, the barium enema x-rays were not reviewed until two days postoperatively. An annular filling defect in the sigmoid colon was found to be an adenocarcinoma at surgery 23 days post-hemorrhoidectomy. An anterior resection was performed. Eighteen months later a friable nodular adenocarcinoma similar to the original one was found at the site of the upper end of the left lateral hemorroidectomy wound. It was superficial, being confined to the mucosal surface. The tumor, with its superficial situation, was regarded as an implantation incurred during the hemorrhoidectomy.

The last case was a 47-year-old man with an adenocarcinoma 5 cm. above the anorectal junction. During the abdominoperineal resection, the rectum was inadvertently opened just above the growth. Thirty months later the patient was found to have a mass deep to the perineal scar. It proved to be an adenocarcinoma with an irregular cord running deep into the pelvis. The authors ascribed the implantation to the spillage of malignant cells when the bowel was entered·

Other instances of similar occurrences were quoted. Investigations showing that Papanicolaou smears from the proximal and distal end of a resected loop of bowel containing a malignancy have demonstrated the presence of tumor cells in a high percentage of cases.

It is therefore obvious that if we are to realize the full benefits of our present day surgical procedures, we must prevent the dissemination of malignant cells up and down the bowel lumen.

To correct this, Cole recommended that tapes be tied around the bowel proximal and distal to the tumor prior to handling the lesion. Morgan and Lloyd-Davies advocated meticulous cleansing of the lumen of both portions of bowel with 1:500 perchloride of mercury. Thirdly, we must not enter the bowel inadvertently. A last admonition is that the operations on the distal bowel must be delayed until any primary tumor found in the proximal bowel has been removed.

PEDIATRICS

STEROID THERAPY FOR RHEUMATIC FEVER. C. M. McCue. J. Pediat. 51: 225-261 (Sept.) 1957 (St· Louis).

Ninety-four patients with acute rheumatic fever, who were treated with cortisone or prednisone during the past six years at the Medical College of Virginia Hospitals, are reported. The ages of the patients ranged between 4 and 18 years, with a mean of 10 years. Four different dosage schedules were used. Twenty-four patients, treated from 1950 to 1953, received a maximum of 150 mg. of cortisone by mouth daily for approximately three weeks (group 1). In 1954, a more carefully planned schedule was begun: a daily oral dose of 200 mg. of cortisone was given for the first 14 days and tapered off over a 61-day period; this schedule was used in 45 patients (group 2). Late in 1955, reports that even larger doses were more protective led to the use of daily doses of 300 mg. of cortisone for 21 days and subsequent tapering off for a total of 61 days; this schedule was used in 17 patients (group 3). The 4th group of patients was treated with prednisone in daily doses of 60 mg. for 21 days and subsequent tapering off for a total of 61 days.

Eight patients died during treatment with the steroid drugs, but these were "bad risk" patients; in 7 of the 8, the steroid therapy was a last resort. About 50 per cent of the patients who were treated with the large doses showed no heart disease at the end of therapy, and 73.8 per cent showed no heart disease or were much improved at the end of therapy. Better results were obtained when the drug was started earlier in the course of the disease and given in large doses.

Comment: There is no doubt about the value of the steroid therapy in rheumatic fever. It is very effective and worthy of anyone's consideration for this condition·

MISSISSIPPI ACADEMY OF GENERAL PRACTICE

ACADEMY LUNCHEON

The Academy will hold its second annual luncheon in conjunction with the MSMA meeting this year. All Mississippi Academy members and wives are invited to attend on Wednesday, May 14 at the Bamboo Room of the King Edward Hotel.

Last years luncheon at the White House was a big success, and an even larger crowd is expected this year.

Members will receive reservation blanks in the mail shortly. Plan to come and bring your wife—and a prospective member or two.

NEW MEMBERS

Dr. T. N. Braddock, Jr., of West Point, and Dr. Robert Holley of Oxford have been elected to active membership in the Academy. Congratulations and welcome!

DISTRICT CHAPTERS

A group of Academy members from Hinds County has asked the Board of Directors for permission to establish a local MAGP Chapter. Because this is not provided for in the Constitution and By-Laws, the matter was referred to the Annual Assembly in September.

The Board did, however, make this recommendation: that the By-Laws be amended to provide for each District to set up chapters and obtain charters from MAGP. The hope was expressed that the Fourth District, largest in the State because of Hinds County, would set an example that the other districts would follow when the size of their membership made such a move feasible.

FACULTY APPOINTMENTS

The following general practitioners, all of them Academy members, have been appointed clinical instructors at the University of Mississippi School of Medicine: Dr. J. Roy Bane, Jackson; Dr. Joe J. Bethany, Magnolia; Dr. Albert L. Gore, Jackson; Dr. John C. Longest, State College; Dr. Tom H. Mitchell, Vicksburg; and Dr. A. T. Tatum, Petal. Twenty-one MAGP members are now on the faculty at the Medical School.

A. M. A. GOLF TOURNAMENT

The American Medical Golfing Association is holding its annual golf tournament in conjunction with the A. M. A. Convention, June 23, 1958, at the beautiful Olympic Lakeside Golf and Country Club, San Francisco, California. This will be a whole day of rest and relaxation with golf, luncheon, banquet, and a prize for everyone. We have left no stone unturned to assure you the very best. Tee off time 8 A.M. to 2 P.M. We cordially invite all golfing doctors to attend. Handicaps scratch to thirty in flights.

For information, contact James J. Leary, M.D., Secretary, 450 Sutter Street, San Francisco, Cal.

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $3.00.

W. H. ANDERSON, M.D. .... **Editor-in-Chief**
MILDRED P. ANDERSON .... **Assistant Editor**

MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY
J. Max Roy, M.D. .... President
Forrest City, Ark.
W. G. Stephenson, M.D. .... President-elect
Chattanooga, Tenn.
Julian K. Welch, Jr., M.D. .... Vice-President
Brownsville, Tenn.
Robert Peeples, M.D. .... Vice-President
Greenwood, Miss.
Ernest J. Stroud, M.D. .... Vice-President
Jonesboro, Ark.
Thurman Crawford, M.D. .... Secretary-Treasurer
Memphis, Tenn.

Mid-South Associate Editors
H. King Wade, M.D. .... Hot Springs, Ark.
Frank M. Acree, M.D. .... Greenville, Miss.
R. L. Sanders, M.D. .... Memphis, Tenn.

MISSISSIPPI STATE MEDICAL ASSOCIATION
Howard A. Nelson, M.D. .... Greenwood
President
Guy T. Vise, M.D. .... Meridian
President-elect
Geo. W. Twente, M.D. .... Jackson
Secretary
Rowland B. Kennedy .... Jackson
Executive Secretary

State Associate Editors
Louis F. Rittelmeyer, M.D. .... Meridian, Miss.
John T. Bryan, M.D. .... Meridian, Miss.

The Publication Committee is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.

Address all material for publication to W. H. Anderson, M.D., 104 Hospitality Street, Booneville, Mississippi.

NOT A TRIVIAL INDICTMENT

Doctor Flether D. Woodward of Charlotteville, Va., opened the Mid-South meeting in February with a paper on automotive accidents, which seemed to champion the thinking of the American Medical Association. A hundred thousand deaths from accidents at the average age of 46 years from every walk of life is much more expensive to our human society than all the deaths from heart disease. The life and hope and productive power in the hundred thousand taken by accidental death squanders lives that have values we can not afford to lose.

Every accidental death could be prevented. But before this is possible many angles must be studied and many plans executed. Dr. Woodward is courageous to say that the drinking driver is the cause of one-half the deaths by automotive vehicles. If this statement be true then it is easy to see that the consumption of alcohol as a beverage is incompatible with the machine age in which we live. If half the accidental deaths on the highways are caused by the consumption of whisky, one-half the murders, one-half the suicide and half the divorces and seventy-five per cent of the dire poverty of the country can be traced to beverage alcohol. The American Medical Association is putting its hand to the plow in helping to solve this big problem in human society and in human economics. We would like to see our state association turn its attention to this problem in a vigorous manner. Maybe we could forego a little banquet whisky, cut down a little on medical politics, and economize a bit on other matters of less importance and do our full duty in consistent admission of a serious facet of one of medicine's greatest problems.

CERVICAL INJURY HIGH IN ACCIDENTS

Three ladies from the North were riding down Highway 45 on their way to Florida. A truck gave their car a hard bump from the rear. They stopped at the first hospital for a check-up. All of them complained of pain in neck, not severe. X-ray revealed two ruptured discs in each of their necks. A child asleep on the back seat was not hurt.

RATIO PARTIAL TO WOMEN

It now appears that women are living about six years longer than men. The girl baby has about 12 per cent better chance of being born in the first place. Accidents claim a high rate in deaths of men. It is said that about twenty-five per cent more men died last year than women; 7,700,000 more widows in our population than men. Maybe women need to take better care of their men; maybe the "boot-training" of men has been neglected—they may need to be brought up a little tougher.

PREVENTIVE VACCINE VALUED TOO LITTLE

Polio is on its way out if we would only apply what we know. It is urged that every person under forty be vaccinated against this dread disease. We are said to have forty-six million who have not responded to this advice. Last year 2000 children and young people were crippled. The polio cripple is exceedingly expensive. Children under five years are most susceptible, about 4·4 per 1,000,000 if not vaccinated, at 40 about one out of a million. But this disease can and should be whipped. This brings us to another responsibility of the medical profession. If doctors will urge their patients to utilize the preventive measure of vaccination, the ratio of unvaccinated would decrease.

NATION'S MOST CRUEL TOLL

Twice as many Americans will die in 1958 from cancer as will be killed in traffic accidents. Highway death is expected to run to 40,000. Medical statistics predict that 80,000 will be lost to cancer. Today one-third of cancer cases are cured or could be· It is estimated that 18 per cent of too-late cases are due to the doctors, 17 per cent due to doctor and patient, and 65 per cent due to the patient. So to whip cancer it is going to take a more concerted effort on the part of every one.

Cancer is our greatest disease challenge. It can be conquered regardless of how tough it may seem.

STATE MEETING

Our State Medical Association is growing and adding more services each year. This year bids fair to be the biggest and the best of all. An innovation is in the making for the Section on Gynecology and Obstetrics under Dr. Simmons. A special round-table breakfast has been planned. Each round-table is assigned to ten men with a subject and a moderator. It sounds like a fine plan to teach and be taught. There will be a number of specialty society meetings on Monday. All alumni groups will meet Tuesday night—Tennessee, Tulane, and Mississippi. The public meeting program will come with the House of Delegates on Tuesday morning.

It is going to be good to spend four days in our capital city of Jackson, our fastest growing city. It will be a great inspiration to breathe the medical atmosphere of our new, growing and popular four-year medical school. We will get a look at the New Felix Underwood Health Center and look in on the headquarters of our State Medical Association· Don't miss our state meeting.

VERSATILE

A patient who had recently moved to town called a doctor at one in the morning. After she obtained some relief from the severe pain, she looked the doctor over and asked: Are you a doctor that treats the patient in the home or in the hospital? The doctor answered by relating an incident. Bob Taylor tells us of a man who felt that he must have the principalship of a certain school. He studied all the questions the trustees had been accustomed to asking. He felt safe, but as he was going out the door a trustee called to him, "Come back, professor, we want to ask you one more question. Do you teach the student that the earth is round or flat? He was on the spot. He scratched his head and replied, "I am well acquainted with both systems, and will be glad to teach either one you want."

The executive committee of the Mid-South Assembly is already on the job and making plans for the 1958 program. We feel quite sure that next year will bring us one of the best of the Mid-South's history.

NO FEDERAL CUT

We are delighted that Hill-Burton funds are not to be cut at the federal level this year. It is fine that our state plans to give aid also to promote hospital construction and health centers. We have a right to be proud of our hospital progress in the state and of the rapid march of better medicine. We commend our lawmakers·

Some people think they sense a depression on the way. We trust they are mistaken. But if it should be true we should be quick to apply preventive measures. Spending for things of lasting value — hospitals and school buildings and hard-surfaced roads — might help. Our state's fine system of hospitals and public health facilities is only a good beginning. Our legislature could not do better than appropriate liberally to aid in hospital construction.

Likewise the state should receive a liberal portion of federal funds for hospital construction, on the basis of real need. The strength of a nation lies in the health of its people.

MISSISSIPPI TRUDEAU SOCIETY

The annual meeting of the Mississippi Trudeau Society will be held at the Robert E. Lee Hotel in Jackson on April 9, beginning with dinner at 6:30 p.m., followed by an address by Dr. Raymond Hofstra, U. S. Public Health Service.

The title of Dr. Hofstra's address will be "Survey Report, Tuberculosis Home-Treatment Program in Mississippi."

NOTICE TO FORMER GRADY HOUSE STAFF

An organization is being formed which is to be composed of all former members of the House staff of Grady Memorial Hospital in Atlanta. Two years ago, letters were sent to all known former House officers. However, we know many names were not included because of an incomplete mailing list. If you did not receive a notice or failed to reply for any reason please notify our office and let us know your name, address, and when you were at Grady. Plans are now being made for our first Annual Meeting next fall.

Address: Grady Hospital Clinical Society, Office: G-160, 80 Butler Street, S. E., Atlanta, Georgia.

LT. COL. RICHARD AUSTIN III ASSIGNED TO ARMY SURGEON GENERAL'S OFFICE

Lt. Col. Richard B. Austin III, Medical Corps, has been appointed Chief of the Aviation Branch in the Office of the Army Surgeon General in Washington, D. C.

Colonel Austin will coordinate all Army aviation medicine activities of the Surgeon General's office and maintain liaison with Army agencies, with the Air Force and Navy, and with civil aviation medicine authorities.

The son of Dr. and Mrs. Richard B. Austin, Jr., of Forest, Mississippi, the colonel has been in the Army since 1943. He served in the European Theater and was awarded the Theater Ribbon with one battle star. He also holds the American Theater and National Defense Ribbons.

MEDICAL LECTURE TOUR TO ASIA

The Asia-Pacific Academy of Ophthalmology is sponsoring a good-will tour to countries of the Orient following the International Congress of Ophthalmology in Brussels in September, 1958. The purpose of this tour, which is to last approximately one month, is to hold joint meetings with ophthalmologists in Pakistan, India, Thailand, the Philippines, and Hong Kong. It is expected that this good will tour will create much interest among physicians in the countries to be visited and contribute greatly to American-Asiatic medical rapprochement.

Our government has given its wholehearted support to the plan of stimulating and facilitating a continuing exchange of information and techniques, treatments and devices for the care of the ill and the blind.

The reception of a group of physicians from the West throughout Asia will certainly be most cordial and will assure the success of this enterprise.

The ophthalmological and medical material in all the countries is extremely interesting and should be of great value to members of the tour·

The Asia-Pacific Academy of Ophthalmology was organized in 1957. Its principal purposes are to extend ophthalmologic knowledge and to advance the arts and sciences of ophthalmology and related sciences in Asia and in countries bordering the Pacific Ocean; . . . to stimulate research in tropical and systemic eye diseases, that are particularly prevalent in Asia and in countries bordering the Pacific Ocean; to cultivate social and fraternal relationship of physicians residing in Asia; . . . to offer postgraduate instruction in ophthalmology through the medium of lectures, roundtable discussions, seminars, clinics, films and other means.

Physicians other than ophthalmologists and their families are also welcome to join this trip!

William John Holmes, M.D., Liaison Secretary, Suite 280, Alexander Young Building, Honolulu 13, Hawaii.

Inquiries regarding travel arrangements should be sent to Compass Travel Bureau, 55 W. 42nd Street, New York 36, New York.

FIFTY-YEAR CLUB

The Fifty-Year Club will hold its annual luncheon this year out at the Medical Center in Jackson at 12:30 on Tuesday, May 13. Dr. D. S· Pankratz will be the host. In advance, the club is grateful to Dean Pankratz for his generous entertainment. It will be fine to breathe the atmosphere of our fine new four-year school. Let us have a good turn out.

BOONEVILLE NURSING HOME

The policy of this excellent nursing home is to meet the individual needs of the sick and aged, to give the best care to the sick, aged, and convalescent.

OZELLE MULLINIX, Operator
PArk 8-5929 302 Bridge Street
Booneville, Mississippi

ANNOUNCEMENTS

Drs. R. R. Braund, J. D. Pigott and R. L. Jones announce the removal of their office from 118 Madison Avenue to 824 Adams Avenue (Adams at Dunlap), Memphis 5, Tennessee.

DEATHS

IN MEMORY OF MRS. F. L. BRANTLEY

On December 20, 1957, Mrs. Clennie Wiggins Brantley was called to her eternal rest, leaving her husband, a large family of children and grandchildren who revere her memory and seek to follow after her Christian teachings.

She was an active member of the Madden Methodist Church, her loyalty and cheerful giving to every worthy call, and her eager interest in all phases of church life bore witness to her devotion to her Christ. She also served as secretary of the Eastern Star.

A charter member and past president of the Leake Unit to Central Medical Auxiliary, her passing has left void a place which is impossible to fill, and has brought sadness to her host of friends. She will be greatly missed by the membership of this organization.

May the torch she carried in simple, unassuming continuous service be held high by those who must carry it forward.

Leake Unit to Central Medical Auxiliary
Mrs. Frank W. Bowen, Reporter

DR. BEN J. MARSHALL

Dr. Ben J. Marshall, 87, retired staff physician of Mississippi State Hospital at Whitfield, died Saturday morning at University Hospital, following a brief illness.

Dr. Marshall was a native of Carroll County, a son of the late Thomas Elam Marshall and Sallie Eubanks Marshall. He received his M.D. degree from the University of Tennessee, and practiced medicine as a country doctor in Carroll County. He married Margaret Menier in 1895, and they celebrated their fiftieth wedding anniversary before her death in 1947.

During World War I, he served in the Medical Corps, and retired from the Army in 1934 with the rank of major.

He was superintendent of the college hospital at Mississippi State from 1913 to 1917; came to the Mississippi State Hospital in 1936 and served on the staff until 1940. He was superintendent of the Mississippi School for the Blind from 1940 to 1944; and again on the staff at Whitfield until his retirement three years ago. He made his home at Whitfield with his daughter, Mrs. Louis Marshall West, who is director of the social service department for the hospital.

He was a member of Galloway Memorial Methodist Church and of the Central Medical Society, where he was a member of the Fifty-Year Club; a member of the American Legion, the Jackson Kiwanis Club and a Woodman of the World.

Survivors include: four daughters, Mrs. Louise Marshall West of Whitfield, Mrs. H. Cooper Kinney of Houston, Texas, Miss Sarah E. Marshall of New York, and Mrs. Norman O. Schwien of San Rafael, California; four grandchildren, Lt. Col. Ben Marshall West of Boulder, Colo., Mrs. Warren H. Karstedt of Arlington, Virginia, Mrs. James A. Boorman of Houston, Texas, and H. Cooper Kinney, Jr., of Houston, Texas; seven great grandchildren; and a sister, Miss Bessie Marshall of Whitfield.

DR. C. H. HOLMAN

Dr. Charles Hines Holman, 77-year-old Carrollton physician, died at University Hospital on March 1.

He was recently honored at a celebration given him by the people of Carrollton upon completion of his fiftieth year in the practice of medicine.

He was also honored by the University of Tennessee where he graduated.

He formerly practiced medicine in Rome, but for many years has lived in Carroll County.

He leaves his widow; three sons, Charles Holman of Jackson, an officer of the McCarty-Holman Co., J. J. Holman of Coldwater, and Henry Flowers Holman of Birmingham, Ala.; a daughter, Mrs. Tom Tardy of Winona; a brother, W. H. Holman of Jackson; three sisters, Mrs. Eckford Bell of Jackson, Mrs. Russell Cook of Utica, and Mrs. A. A. Tate of Greenwood.

DR. W. H. CURRY

Dr. William Hugh Curry, longtime Eupora physician, died February 19, after suffering a heart attack. He was 77.

Born in Webster County near Clarkson, he was a graduate of the University of Tennessee School of Medicine. Following his graduation, he practiced medicine at Indianola and Mantee before moving to Eupora in 1919.

Before attending medical college, Dr. Curry taught school in Webster and operated a store at Maben.

Survivors include his wife, Mrs. Annie Kimbriel Curry; two sons, Jim Curry, former Webster County sheriff, and Robert Curry, both of Eupora; three daughters, Mrs. Bill Simpson of Lajolla, California, Mrs. Melvin Love of Key West, Florida, and Mrs. Alice Donovan of Memphis; two sisters, Mrs. Jim Meridith of Mathiston, Mississippi, and Mrs. Jinnie Holland of Maburn, Arkansas; one brother, Jim Curry of Cumberland; and several grandchildren.

Revelation is always measured by capacity.
—Michael Fairless

respiratory infections
gastrointestinal infections
genitourinary infections
miscellaneous infections

immediate therapeutic response

use

Sumycin

Squibb Crystalline Tetracycline Phosphate Complex

intramuscular

with Xylocaine*

250 mg. per 1 dose vial
100 mg. per 1 dose vial

- when oral therapy is contraindicated (vomiting, dysphagia, intestinal obstruction, gastrointestinal disorders)
- when the patient is comatose or in shock
- postoperatively

1. fast peak blood and tissue concentrations
2. high cerebrospinal levels
3. for practical purposes, Sumycin is sodium-free

Each vial contains tetracycline phosphate complex equivalent to 250 mg., or 100 mg., of tetracycline HCl. (Note: 250 mg. dose may produce more local discomfort than the 100 mg. dose.)

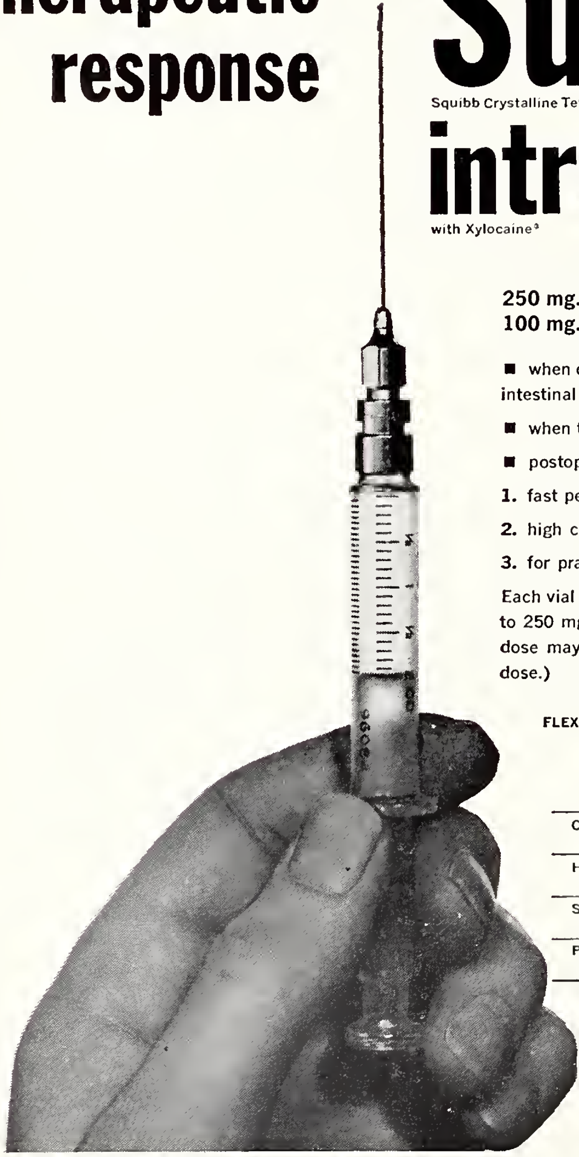
FLEXIBLE DOSAGE FORMS FOR CONTINUING ORAL THERAPY

	Tetracycline phosphate complex equiv. tetracycline HCl (mg.)	Packaging
Capsules (per capsule)	250	Bottles of 16 and 100
Half Strength Capsules (per capsule)	125	Bottles of 16 and 100
Suspension (per 5 cc. teaspoonful)	125	60 cc. bottles
Pediatric Drops (per cc.—20 drops)	100	10 cc. bottles with dropper

SQUIBB

Squibb Quality—the Priceless Ingredient

*SUMYCIN'® IS A SQUIBB TRADEMARK *T.M.® ASTRA PHARMACEUTICAL PRODUCTS, INC.



Infections of the Lower Urinary Tract of the Female*

FRED K. GARVEY, M.D.
Wake Forest, North Carolina

CYSTITIS AS A primary infectious process in both the male and female is practically nonexistent. Therefore, it will not be included in this discussion as a disease entity. Its involvement secondarily from inflammatory lesions proximal and distal to it, as well as from contiguous organs, is well known. The bladder, by its sensitive reflection of adjacent inflammation, manifest by various degrees of voiding symptoms, makes cystitis a common and very aggravating diagnosis even though it is more a symptom than a disease.

The most common disease seen in the office of the urologist is inflammation of the lower urinary tract in the female. The lesion in the great majority of cases is in the urethra and consists of infection either specific or non-specific.

The common symptoms of disturbed urination consist of increased frequency (mainly diurnal), burning, dysuria, and occasionally strangury from vesical spasm with or without terminal hematuria. The usual referred pains are suprapubic discomfort—usually described as a "pressure" or "bearing down pain," lower quadrant pains, pains in the inner thighs, and the well-known place that cannot be pointed out to the physician, but is so glibly described as the "stem of my bladder."

There are many types of less common referred pains. Lumbosacral and flank pain have on many occasions been found to result from urethrotrigonitis. Dr. Cabot of Boston made the statement many years ago "that any pain within two feet of the female urethra which does not seem adequately accounted for otherwise should be suspected of being due to the urethra."

Gonorrheal Urethritis

In most cases of gonorrhea in the female, the urethra is involved and the disease is similar in many respects to that of the male urethra. The urethra in general is inflamed with a purulent exudate and the urethral glands, particularly Skene's glands, may become involved and difficult to clear up until they are destroyed by fulguration.

Fortunately, a great majority of cases respond to penicillin which is a specific for the gonococcus. Involvement of the paraurethral glands, however, may occur and infection seal off temporarily out of reach of the antibiotic only to reopen and reinfect the urethra later, thereby perpetuating the infection to a stage of chronicity. If the organisms are difficult to find during the course of treatment reactivation by instrumentation of the urethra often will aid in the diagnosis. Intense penicillin therapy should be given each time there is a reactivation. A criterion for cure is three negative smears after instrumentation of the urethra within a 10-day period after treatment. Cultures are much more accurate than smears as a definite evidence of cure.

Non-Specific Infections of the Female Urethra

This condition, as stated previously, is one of the most common urologic complaints among women. Although the symptoms are suggestive of infection, it is often difficult to demonstrate pathologic organisms and it is not uncommon to have a negative urine which further confuses the diagnosis. Urethritis occurs at all ages including infants, is more common after puberty, and even more frequent in the middle-aged married woman. The proximity of the female urethra to the vagina exposes the urethra to the trauma of coitus and childbirth, making it readily susceptible to infection. In infants, still in diapers, the external urethral orifice is bathed, not only in urine, but the fecal material as well, presenting every opportunity for infection of the urethra. The urethra being very short and straight allows for direct extension of the organisms along its entire length. The fact that the incidence of pyelonephritis in girl babies is more common by a ratio of 10:1 than in male babies seems explainable on the basis of the above peculiar conditions.

The common organisms involved in non-specific urethritis in all ages are the Gram-negative bacilli and most commonly the colon bacillus.

Marital cystitis or honeymoon cystitis is a fairly common occurrence in newly married women. It results from the beginning of sexual activity and without a doubt is brought on by trauma to the urethra with lowering of resistance to organisms already present in the urethra. Not infrequently a pyelonephritis may follow the initial urethritis with fever and flank pain as well as the symptoms of cystitis. The mechanism may be ascending infection, but most likely is hematogenous in origin.

---

*Presented before the sixty-ninth annual session of the Mid-South Postgraduate Medical Assembly, February 11-14, 1958, Memphis, Tennessee.

A high percentage of the recurrences of urethrocystitis later in life may be traced back to marital cystitis, which would indicate that there was a latent low grade infection smouldering over a period of years, only to be activated by childbirth, catheterization, or by sexual activity.

The occurrence of chronic urethritis and the problem of its persistence and resistance to cure have been recognized for 200-300 years. Efforts to account for the chronicity of this very disturbing disease were made by DeGraaf as early as 1672[1]. He reported on glands of the female urethra to which he attributed the cause of deep-seated infection that could not be reached with antiseptics and perpetuated smouldering infection with recurrences. DeGraaf[2] stressed the fact that the glands on the proximal portion of the urethra, together with the paraurethral and vestibular glands constitute a female prostate. Virchow[3] in 1853 observed glands in the posterior female urethra which he spoke of as being homologous with the male prostate. Evatt in 1910 reported one of the first systematic studies of the embryology of the urethra. He stated that the glands in the adult female possess a structure which corresponds with that of the prostate in a 5-to-6-month-old male embryo. He stated that there can be no doubt that the glandular organs surrounding the whole length of the female urethra is the homologue of the prostate in the male. This work has been verified by numerous observers such as Johnson[5] in 1926, Korenchevsky[6] in 1935 and by Folsom and Caldwell in 1931.

A study of Petrowa[7] and associates in 1939 through an embryological approach came to the conclusion that in the newborn infant the entire urethra was homologous to the male urethra and that the vestibule and its paraurethral ducts is a result of a splitting or a dividing of the urogenital sinus forming the vestibule rather than producing an anterior urethra as is seen in the male. Korenchevsky explains this on the basis of hormones, the estrogen predominating over the androsterone, thereby producing a female. Experimentally by injecting androsterone into ovariectomized rats he produced a definite prostate gland while in the normal rats he could find only rudimentary evidence of the tendency for prostate gland formation. This work led to further studies on the potential role of hormones as etiologic agents in the production of urethritis in the female. Moore and Price in 1932 pointed out that gonad hormones stimulate homologous reproductive accessories, but are without effect on heterologous accessories. In other words, male hormones would have no effect upon the female genital system after oophorectomy but do, however, stimulate the vestigial structures of the female which are homologous with those in males. This substantiates Korenchevsky's observation that his female rats, which were found to have a rudimentary prostatic gland, developed hypertrophy of these glands when given androsterone. In other words, these glands in the female urethra are vestigial in the normal females, but can be enlarged or developed into "female prostates" by injection of male hormone. It is well known that many of these patients with marked symptoms of chronic urethritis have developed their symptoms about the time of menopause when the male and female hormones are in probable imbalance. As a result we might expect a physiological hypertrophy with congestion and infection of these glands and in some cases actual obstruction. This might well account for a good portion of the bar formations which have to be resected in women to rid them of their symptoms of prostatism.

Caldwell and Folsom[3], in post mortem studies of 100 urethras, found periurethral glands in 92 per cent. The majority of these were found to be lateral and posterior to the urethra and near the bladder neck. They appeared in all age periods and by the usual standards must be considered glands. They were tubular and tubulo-alveolar in type with distinct branching tendency. These glands were found to produce a protein type of secretion which becomes inspissated and may occlude the lumens of the alveoli and tubules and in some instances their secretions are retained forming definite retention cysts. They were considered definitely secreting glands and according to the author's conclusions, the secretion is comparable only to that of the prostate gland in the male.

As to the incidence of infection in this group, of the 8 per cent having no glands 75 per cent showed no inflammation. Inflammation was present to some degree in 100 per cent of the remaining 82. In a few urethras there was a definite periglandular and periurethral fibrosis and in some cases small nodules of glands were found completely surrounded by fibrous tissue. It was the conclusion of Caldwell and Folsom that periurethral glands play an important role in harboring infection and in distributing it to the upper urinary tract. Furthermore, they concluded there is a possible role of hormones as etiological agents but suggested that this field needs further study.

Lintgen and Herbut[4] reported the results of their study on 100 consecutive female urethras taken at autopsy. Eighty-six of these were from adults and 14 from infants, three of whom were premature. Measurements of the adult female urethra compared with a series of posterior urethras in the male confirmed a gross hormology. Thirty-two cases showed gross inflammation while 21 cases showed mild congestion of the mucosa of the urethra and trigone and bladder. Many of them showed Brunn's nests along with acute inflammation and some showed urethral cysts. Sixty-three of the 100 cases showed no gross abnormalities. Glands were found in the posterior urethra in 65 per cent of the cases. Seventy-six of the 100 female urethras showed inflammatory reaction histologically. Adenomatous hyperplasia was found in none of the 100 cases. His conclusions were that inflammation was present in the glands, but no cause of the inflammation was apparent.

DIAGNOSIS

The symptoms of frequency, dysuria, and suprapubic pain are the chief complaints in chronic urethritis in the female. Except for the acute exacerbations with intensified symptoms and leucocytes in the urine, the urine is usually clear and deceiving. The acute episodes may show terminal hematuria and certainly pyuria, but the patient is usually afebrile and there are no symptoms referrable to the kidney region. The urethra is usually tender and external pressure on the floor of the urethra or the passage of a catheter will produce pain. There may be narrowings along the canal from long-standing infection. This can be detected by the acorn bougie. There may be general thickening of the urethra which can be detected by palpation and this is more easily determined with an instrument, such as a sound, in the lumen. Thickening at the vesical neck may suggest a bar or fibrotic contracture but is not definite.

Endoscopic examination is necessary to make a diagnosis. The examination usually shows reddening and congestion of the posterior urethra or a granular appearance of the mucosa in more advanced cases. There may be inflammatory tags or polypoid masses around the vesical outlet. Quite often cysts may be found surrounding the vesical neck with the appearance of a rosette. Granulations and lymphocystic bodies are not infrequently seen. Chronic urethritis usually causes some extention of the inflammation along the trigone and occasionally general infection of the entire base of the bladder. In acute urethritis, the entire trigone and base of the bladder are reddened and may be hemorrhagic.

A normal urine with the findings of chronic urethritis and the absence of upper urinary tract symptoms usually indicate that the pathology is only in the urethra, but this cannot be relied on to the exclusion of upper urinary studies. Intravenous pyelograms are usually sufficient to rule out the upper urinary tract as a source of the urethritis. In instances of urinary difficulty along with the other symptoms of urethritis there should be suspicion of a contracture or bar formation—or in other words, female prostatism. If this is of long-standing, there will be thickening of the bladder wall with trabeculation and hypertrophy of the trigone as well as a definite posterior lipping on inspection with the endoscope.

Skene's glands should be investigated for infection and with every examination an attempt should be made to express secretion from each of these glands. The finding of a purulent secretion in the Skene's glands is suggestive of a past gonorrheal infection. It is a little unusual to get a primary skenitis with non-specific organisms.

TREATMENT

Treatment of chronic urethritis on the whole is unsatisfactory. Temporary relief by local treatment with sounds, silver nitrate and electrodesiccation usually is obtained, particularly if chemotherapeutic agents and sedatives are used. The tendency for recurrence of symptoms and a recrudescence of the inflammation plus a state of anxiety and neurosis which commonly accompany this condition make complete recovery infrequent and treatment unsatisfactory. Dyspareunia and fear of cancer, in my experience, are two factors which make the treatment difficult. Furthermore, repeated pelvic surgery without proper justification or relief of symptoms only contributes to the state of neurosis, nervousness and apprehension and consequently makes relief by definitive treatment of the urethritis more difficult.

The best approach in treatment, in my opinion, first, is to be sympathetic and realize that the patient is in a nervous state. Gentleness and the use of cocaine in the urethra is very important because there usually is a great fear of being hurt. A thorough systematic examination is done definitely establishing that the condition is limited to the urethra and bladder neck, being very careful to rule out interstitial cystitis. After the examination is complete, the patient should be told that she has no cancer or other serious disease that will necessitate a major operation. It should be explained that the urethra and bladder neck react with great discomfort to minor disease and that the condition is not nearly so serious as the symptoms would indicate. It should further be explained to the patient that suprapubic pain is referred and does not as a rule indicate abdominal disease; that it can be accounted for from the urethra and trigone.

Mild dilatation of the urethra followed with an instillation of some mild antiseptic such as furacin, Aeriflavine, or mild silver nitrate solution is probably the most important part of the therapy. Antibiotics are not indicated except in acute infections with virulent organisms and should not be used in chronic urethritis. The soluble sulfa drugs, particularly those combined with pyridium, help allay symptoms and have some curative value. A sedative consisting of a combination of belladonna and phenobarbital is usually indicated and is sufficient during the course of local treatment of the urethra. Occasionally a tranquilizer is necessary in the highly nervous individual. Urethral dilatation tends to make the urethral glands drain better and gives mild stimulation toward development of local immunity to the infection. It also causes absorption of soft infiltrations and granulation tissue that frequently accompany this condition.

Where cysts or polyps occur cauterization, either with topical applications of concentrated silver nitrate, or electrocoagulation through the endoscope, is necessary to bring about a cure.

Where there is definite evidence of thickening or lipping of the posterior urethra with bar formation or contracture, nothing short of a transurethral resection of this tissue will bring relief. The most dramatic relief that we see in urology occurs in resection of these bladder necks that definitely produce obstructive symptoms or perpetuate a cystitis.

Continued reassurance to these patients and encouragement in the use of some diversion in their daily habits or in taking vacations will go a long way in clearing up the phychosomatic aspects of the disease.

Prevention of the high incidence of chronic urethritis in later life can, to a great extent, be done by proper management of the earlier manifestations such as marital cystitis and those infections occurring in infancy and childhood.

It is believed that most infections that begin with coitus will be self limited by gradual immunization, if there is no deep seated involvement of the urethral glands. Unfortunately the incidence of these glands is high and the potentiality of chronic recurrence with its discomfort for years is not to be taken lightly. This fact necessitates responsibility of the physician to make every attempt to cure this condition in its early stage. The first thought then would be to use antibiotics in an effort completely and quickly to sterilize the urethra. This method would be feasible if the source of repeated attacks could be removed. Since it cannot, the danger of changing the type of bacteria from the less virulent E. coli to one of the more difficult and resistnat strains, as so commonly occurs with the use of antibiotics, seems to militate against their use in non-specific urethritis.

The colon bacillus is at first almost universally sensitive to the sulfonamides. A soluble sulfa drug in not too large dosage will clear most cases of early urethritis aided by the immunilogical processes, and is not likely to break down the natural development of immunity. Neither will it bring about an imbalance in the intestinal and vaginal flora allowing overgrowth of the more virulent and resistant pathogens that may follow and perpetuate chronicity, as so frequently occurs in antibiotic therapy. The rationale then for management first is to isolate by culture the offending organism and begin therapy with gantrisin, elkosin or thiosulfil. After the acute stage is past mild instrumentation is instituted repeating the cultures and urinalyses till all symptoms and signs have disappeared. At this stage, attention to hygiene is important. Prophylactic doses of sulfa should be taken just prior to coitus until several months of freedom from infectious bouts have elapsed. Endoscopy during this period is important to apprehend any beginning pathologic changes in the urethra. Such changes can be avoided by instrumentation and instillation of furacin or silver nitrate.

The same rationale may be followed in nonspecific urethritis in the infant or child. Sulfonamides are preferable for the same reason and in our experience instrumentation in the chronic stage is a necessity in effecting a cure.

Estrogen therapy has a place in the treatment of chronic urethritis in certain patients at or about the age of menopause. There seems to be a definite increase in intensity of the lower urinary symptoms in patients with evidence of senile vaginitis. Marked relief is often obtained by the administration of estrogen, preferably in the form of vaginal suppositories or vaginal cream, for a period of ten days to two weeks.

Trichomonas Vaginalis Infestations of the Female Urethra

Trichomonas infestation of the urethra may occur at any age among women and is not uncommon. Such involvement is usually secondary to infections of the vagina. The diagnosis can be made by finding the organisms in the urine or in the urethral discharge.

The treatment of this condition first calls for the eradication of the infection in the vagina and in encouraging better hygiene. Most of the urinary antiseptics or antibiotics will clear up trichomonas infection provided the source is removed.

There are other conditions which produce cystitis and which must be recognized and obviated before the symptoms of cystitis can be relieved. These are upper urinary tract infections as pyelonephritis, pyonephrosis, renal tuberculosis, or calculous disease of the kidney or ureter. Vesical stones and neoplasms also produce pyuria and may cause the classic bladder symptoms such as frequency, urgency and dysuria. Diverticulum of the female urethra is not particularly unusual and certainly perpetuates urethral and bladder infection. It usually results from gland infection in the urethra with abscess formation and subsequent rupture into the urethra producing a pouch for stagnation of infected urine. Most patients with urethral diverticula complain of painful and frequent urination with recurrent attacks of cystitis and purulent urethral discharge.

The diagnosis of diverticulum can be made by feeling a tender mass on the anterior vaginal wall from which digital pressure will express pus into the urethra. The diagnosis can be confirmed by endoscopy and finding the opening of the sac in the urethra.

The cure of this condition is brought about by excision of the pouch and careful approximation of the defect in the urethra.

SUMMARY

1. Chronic urethritis is the most common lower urinary tract disease in the female. Its symptoms are those of urinary discomfort greatly out of proportion to the gravity of the disease.

2. Sexual neurosis and fear of cancer serve to magnify the picture in many instances thereby making treatment difficult.

3. The condition is often intractable and its chronicity results from deep seated infection in accessory or periurethral glands.

4. Treatment must be specific to the affected area, pursued to cure, and accompanied by a modicum of psychiatry in the form of sympathetic interest and reassurance to the patient.

5. Judicious instrumentation accompanied by proper chemotherapy is the most effective treatment now at hand.

6. Hormonal imbalance occurring at the age of menopause often aggravates the symptoms of chronic urethritis. Relief in such cases can be obtained by the administration of estrogens.

7. Other less common causes of lower urinary infection are diverticulum, tumor, stone and renal infections. These must be eliminated in order to relieve the symptoms of cystitis.

REFERENCES

1. Huffman, J. W.: Development of the paraurethral glands in the human female. Am. J. and Gyn., 46, 1943.
2. Folsom, A. I. and Alexander: Referred pain from the female urethra. J. Urol. 31: 1934.
3. Caldwell and Folsom: A clinical and pathological study of the posterior female urethra. J. Urol., 55, 1946.
4. Lintgen and Herbert: A clinico-pathological study of 100 female urethras. J. Urol., 55, 1946.
5. Johnson, F. P.: The homologue of the prostate in the female. J. Urol., 8: 13-33, 1921.
6. Korenchevsky, V., and Dennison, M.: The histology of the sex organs of ovariectomized rats treated with male or female sex hormones alone or with both simultaneously. J. Path. and Pact., 42: 91-104, 1936.
7. Petrówa, E. M., Karaewa, C. S. and Berkowskaja, A. E.: The structure of the female urethra. Arch. Gynec., 163:343-357, 1939.
8. Moore, C. R. and Price, D.: Gonad hormone function and the reciprocal influence between gonads and hypophysis with its bearing on the problem of sex. Am. J. Anat., 50: 13-61, 1932.

Walter Lippman writes: "Our schools and colleges are overwhelmed by the growth of the population they are supposed to educate, and they are under enormous pressure—for the most part irresistible—to lower their intellectual standards. There is an ominous tendency in American education to teach more and more students less and less of the great disciplines which form an educated man."

Surgical Treatment of Diseases of the Thyroid Gland*

WILLIAM F. RIENHOFF, JR., M.D.
Baltimore, Md.

1. Carcinoma of the thyroid, and its relation to solitary and multi-nodular goiter
2. Thyrotoxicosis associated with nodular or diffuse enlargement of the gland.
    1. Acute thyroiditis
    2. Sub-acute thyroiditis
    3. Hashimoto's struma
    4. Diffuse colloid goiter

THE PRIMARY carcinomas of the thyroid are a heterogenous group of lesions of markedly different histological structure and biological behavior. The less anaplastic lesions have proved particularly troublesome. Their benign histological appearance or their apparently benign course is so at variance with the current conceptions regarding carcinoma that the lesions are usually considered benign. Thus, the only primary carcinomas originally recognized were the more anaplastic lesions, the treatment of which was then and is now most unsatisfactory.

The resulting pessimism regarding carcinoma of the thyroid, because of this fact, is at present quite unfounded. Among current cases, less than 20 per cent of lesions are of the anaplastic type. As with many other malignant lesions, until better diagnostic or therapeutic methods become available, there is little hope that ultimate results after treatment of lesions of the anaplastic can be materially improved. This is decidedly not the case with all other types of carcinoma of the thyroid. Therapeutic methods currently available are quite adequate, providing only that the lesion is not inoperable. Furthermore, there is every reason to believe that the proportion of lesions found inoperable at present can be materially reduced, primarily through the routine removal of nodular goiters.

A broader understanding of carcinoma of the thyroid would unquestionably also contribute to better ultimate results. The apparent marked differences of opinion regarding several aspects of the problem have done much to perpetuate some of the confusion of the past. Such differences are far more apparent than real. There are at least three widely used pathological classifications, which superficially seem to differ from each other markedly. However, they are, in fact, quite similar and need cause little confusion. The different pathological criteria employed by different pathologists result in rather uniform diagnoses. In spite of the difficulties of microscopic diagnosis, particularly of malignant adenomas, a lesion considered malignant at one institution is practically always considered malignant at another. Similarly, the indications for resection of regional lymph nodes and the extent of the operative procedure have been relatively standardized, in spite of the use of different terms to describe the operative procedures. There is perhaps some true difference of opinion regarding external irradiation, but practically the differences are not important. For clinical purposes, current knowledge regarding carcinoma of the thyroid is reasonably comprehensive, and the confusion that has surrounded the subject for years has been largely dispelled.

It is of the greatest importance that the surgeon who takes upon himself the responsibility of the care of a patient with one of the various types of carcinoma of the thyroid, should have a clear-cut philosophy and plan of operative procedure suited to the type of malignant tumor encountered. Unfortunately, particularly in the papillary type of adenocarcinoma, a frozen section of the tissue removed at the time of operation may be confusing; but these instances are the exceptions which prove the rule. The surgeon should be guided by the pathologist as far as possible in order to avoid not only performing an unnecessary radical operation but also an inadequate one. The tragic examples that are so frequently seen following such operations are generally due mainly to a lack of understanding on the part of the operator of the pathogenesis and progression of certain thyroid malignancies and thus performing an inadequate dissection of cervical lymph glands and the thyroid itself. It is not always possible even under the most favorable circumstances to be absolutely certain of the exact histological characteristics of the tumor in question, because some are pleomorphic. In such an event it is better to err on the side of a thorough removal of the thyroid and its associated lymph glands than otherwise. Excepting the anaplastic carcinomas, practically all types of malignant epithelial tumors of the thyroid can be cured if operated upon before the tumor has spread beyond the confines of the thyroid gland.

All symptoms and signs of carcinoma of the thyroid, except for the nodule in the thyroid, develop relatively late in the course of the disease. By the time that the diagnosis is suspected or can be made with some certainty on clinical examination, the lesion either has metastasized or has spread beyond the capsule of the thyroid. As with other malignant lesions, but particularly so for lesions of the thyroid, the interval between development and spread is the interval during which treatment has the best chance of succeeding. In the majority of carcinomas of the thyroid, this interval before spread is prolonged. Any real hope of materially improving results, using present-known methods of treatment, lies in removing the malignant nodule before it has spread, or, for practical purposes, before symptoms suggestive of malignant change have made their appearance. This implies that nontoxic nodular goiters should be removed more or less routinely.

---

*Presented before the sixty-ninth annual session of the Mid-South Postgraduate Medical Assembly, February 11-14, 1958, Memphis, Tennessee.

Although the true incidence of carcinoma in nodular goiter is unknown, there is considerable information concerning the incidence of carcinoma in nodular goiters that have been removed surgically. This incidence in surgical material as reported in recent years, with few exceptions, varies from 5 to 33 per cent.

A most important point to be stressed is that the solitary thyroid nodule carries a much greater incidence of malignancy than does the multinodular lesion. Lahey and Cole emphasize this. Cole reports 24 per cent of solitary nontoxic nodules were malignant, but only 11 per cent of the multinodular nontoxic glands as malignant. Thus one in four of the solitary nontoxic goiters was cancerous. The size of the nodule is unimportant since carcinoma has been found in adenomas only a few millimeters in diameter. The Lahey Clinic in reviewing all patients with thyroid cancer treated during 1951 and 1952 found 52 cases of malignancy in a group of 156 with discrete nontoxic nodules, an incidence of 33.3 per cent. Therefore one out of three solitary nontoxic nodules was cancer. If all types of nontoxic nodular goiter are included, multiple as well as single, the occurrence of carcinoma was 10.2 per cent. The Hospital of the University of Pennsylvania reports that of 1523 surgically treated nodular thyroid lesions between 1945 and 1952, 174 or 11.4 per cent were cancer.

My own personal series of cases of diseases of the thyroid gland upon whom I have operated, made histological studies of the operative specimens removed, and followed up the patients after discharge from the hospital, now totals 2489 patients. This number includes all types of diseases of the thyroid gland. Eighty-seven cases, or 3.4 per cent, in this group proved to be malignant. One thousand twenty-nine patients of this total of 2489 were found to have nodular goiters of which 87, or 8.5 per cent, proved to be carcinoma; 686 of the 1029 were solitary nodules in which 17 per cent were considered to be malignant on pathological examinations.

Of 87 cases followed we were unable to trace 30, but received information on 57, in which 32, or 56.2 per cent, were living and 25, or 43.8 per cent were dead. In the group that had died from one to four years postoperative, the malignant growth had spread beyond the confines of the original nodule. In each of these patients malignancy was suspected clinically before operation. In contrast to this group, the patients who have survived, i.e., 56.2 per cent, for five years or more were thought to have clinically benign nodules. In this group the pathological diagnosis of malignancy was made within the confines of the nodules. It would therefore seem reasonable to assume that if solitary nodules are removed from the thyroid gland by surgical excision while they are yet clinically benign, even though a pathological diagnosis of malignant change confined to the nodule is reported, the patient has an excellent chance of permanent cure. Conversely, if the malignant change has spread beyond the confines of the nodule the prognosis is markedly worsened. This is particularly true of all varieties of carcinoma, even the well differentiated slow-growing types. In the latter types, i.e., the so-called malignant adenoma or adenocarcinoma, and also the papillary group, on account of their slow growth some years may pass before a recurrence due to a previous spread beyond the confines of the nodule may manifest itself.

In a current but as yet incomplete study of all cases of carcinoma of the thyroid operated upon in the Johns Hopkins Hospital from 1925-1956, there were 170 instances. The majority of these cases were included in my own personal series cited above, but there were a few additional patients operated upon by various members of the visiting or house staff. Dr. James Jude, a member of the resident surgical staff, permitted me to quote these figures from a detailed pathological study which he will report at a later date. The sex distribution of this group corresponded to other reports in the literature in showing a predominance of females, 126 to 44 males. The age distribution was also typical. Our series demonstrated a high incidence of the well-differentiated and therefore curable types of carcinoma in the younger age groups, second, third, and fourth decade, with a preponderance of the more anaplastic or undifferentiated tumors, the incurable ones, in the fifth and sixth decade. By far the greater number of malignant tumor of the thyroid glands in this series, i.e., 107, or 63 per cent of the 170 total, were the well differentiated slow-growing type that could be permanently cured if adequate early removal is employed. At the primary clinical examination the patient had obvious carcinoma in 34 patients, or 20 per cent; a negative thyroid examination in 22 cases, or 13 per cent; palpable lymph nodes in 58 patients, or 35 per cent; a single palpable nodule in 63, or 37 per cent, of those later to be found to have carcinoma. It is somewhat surprising that the reported rates are so consistent, depending as they must to a large extent on the proportion of nodular goiters in which resection is advised. The findings of the Mayo Clinic, as reported by Pemburton and Black, which may be taken as representative, will be quoted, since large numbers of cases are involved and since recent data are available.

During the decade from 1939 through 1947, the incidence of carcinoma in resected nodular goiters was 4.8 per cent. The term "nodular goiter" is used here to designate all goiters, including clinically evident carcinomas, that were nodular on clinical examination. The figure is somewhat meaningless as a measure of the incidence of unsuspected carcinoma in nodular goiter, since clinical acumen extends far beyond the mere palpation of nodules. The incidence of carcinoma not evident as such on clinical examination varies with the presence or absence of toxicity, with sex, and with age.

Adenomatous Goiter Without Hyperthyroidism and Carcinoma

During the decade covered in the review, thyroidectomy was carried out because of adenomatous goiter without hyperthyroidism in 3247 cases. A carcinoma was found in the resected tissue of 244 cases (7.5 per cent). This incidence, while in keeping with that reported by others, is misleading in that clinical impression as to the possibility of carcinoma was purposely not considered. In 126 of the 244 cases, there was some indication in the record that carcinoma was suspected preoperatively. In 3121 of the 3247 records, there was no indication of such suspicion. Yet in the group there were 118 carcinomas, all of which were recognized first either when the thyroid was resected or on pathological examination. They believed that this incidence of 3.8 per cent is a fair estimate of the incidence of clinically unrecognizable carcinoma in cases of adenomatous goiter without hyperthyroidism.

The chance of finding carcinoma in solitary nodular goiter is undoubtedly greater than in a multiple nodular goiter. As Cope and his colleagues have pointed out, carcinoma begins as a localized change in the thyroid. If only goiters in which the pathological changes are limited to one region are considered, the proportion of carcinomas will be higher than if, in addition, thyroids in which the changes are generalized are included. They found the incidence of carcinoma in clinically solitary nodules to be approximately twice as great as in all nodular goiters without hyperthyroidism. This finding is in accord with our clinical impression.

Carcinoma is far less likely in the presence of hyperthyroidism than in its absence. Among cases in which the clinical diagnosis was adenomatous goiter with hyperthyroidism, the incidence of carcinoma was slightly less than 1 per cent, while among cases of exophthalmic goiter the incidence was less than 0.5 per cent. The possible presence of carcinoma in association with toxic goiter is of minor practical importance, since toxic nodular goiters are usually resected and tissue is thus available for microscopic examination. The malignant lesions found in association with exophthalmic goiter are practically always minute papillary lesions, probably of little clinical significance. If some form of treatment other than resection is chosen for toxic nodular goiter, the possibility of unsuspected carcinoma, however, should be considered.

Age

While carcinoma of the thyroid has the usual age distribution of other carcinomas, it is not particularly uncommon in children. Two to 3 per cent of all thyroid carcinomas occur in children less than 14 years of age, while approximately one-third of all papillary lesions occur in children and young adults. The proportion of cases of nodular goiter in which a malignant lesion is found is the greater the younger the patient. In children 14 years of age or less, fully one-third of nodular goiters are malignant. While the proportion of cases in which the lesion is malignant declines rapidly after puberty, the incidence in those less than 30 or 35 years of age is far greater than in older patients. The reason probably has to do with the fact that benign nodular goiter is unusual in young persons and becomes progressively commoner with increasing age. Consequently, the proportion of nodular goiters that are malignant declines from an extreme high in childhood to a relatively low figure in old age. The neglect of a nodule in the thyroid of a child until it is clinically diagnosable as carcinoma, and hence frequently inoperable, is particularly unfortunate, since treatment is notably successful before this stage has been reached.

Dr. Samuel Asper, a member of the upper medical staff in charge of the thyroid clinic at the Johns Hopkins Hospital, informed me that of 17 patients under 20 years of age with carcinoma of the thyroid, nine of these patients had received some form of x-radiation therapy in infancy or childhood. Four received radiation to the thymus, one to laryngeal papilloma, one external radiation to the tonsils, two radiation to the nasopharynx and one radiation to the base of the tongue. In each instance it seems likely to me that the thyroid region was also in the portal.

Thus, there is an apparent relationship between x-radiation given in infancy or childhood and the later development of thyroid cancer. Duffy and Fitzgerald at the Memorial Hospital in New York had 10 of their 28 juvenile patients with thyroid cancer with such history or radiation. Clark in Chicago had 15 patients, each of whom had a history of radiation. The best control study comes from the group in Rochester, New York, where it was shown out of 14,000 children given x-radiation to an enlarged thymus in infancy that there was a far greater incidence of thyroid carcinoma than could be expected from the population at large and certainly far greater incidence than in the control group of untreated siblings.

SIGNS AND SYMPTOMS OF CARCINOMA OF THE THYROID

Before listing the signs and symptoms, the genesis of such changes might be considered profitably. The first clinical evidence of carcinoma of the thyroid is the development of a nodule within the gland. Rarely, metastatic deposits in cervical lymph nodes, bones, or lungs may appear before the nodule in the thyroid is evident clinically. However, it is most unusual not to be able to find some abnormality of the thyroid by the time metastatic growths have become clinically evident. In the case of encapsulated carcinomas, particularly of malignant lesions that apparently develop in adenomas, findings suggesting that the lesion is malignant begin to appear when the carcinoma infiltrates the capsule of the lesion. After this has occurred, the form of the nodule tends to become irregular, and the mass becomes less movable within the parenchyma of the lobe. Similarly, the relative fixation and irregular shape of the non-encapsulated lesion ultimately become evident on clinical examination if the lesion is sufficiently large. The characteristics of the nodule are more rapidly appreciated if the lesion develops near the anterolateral capsule of the lobe. They are far less evident in the case of nodules situated deeply within the lobe or near the posterior capsule.

Ultimately, the infiltrating malignant tissue extends through the capsule of the thyroid to involve surrounding structures. At this stage, for the first time, excluding from consideration metastatic growths and their manifestations, the correct diagnosis becomes more or less obvious clinically. Unfortunately, by this time, involvement of surrounding structures often precludes the possibility of complete removal. At the present time fully one-third of all carcinomas of the thyroid prove inoperable, in the sense that not all of the malignant tissue can be resected by the time definitive treatment is first attempted. This proportion of inoperable cases is far higher than that of the breast or colon and closely approaches that of the stomach.

A history of the relatively sudden appearance of a nodule within the thyroid or of the sudden development of a goiter is of course suggestive of carcinoma. Similarly, the history of a progressive increase in the size of a nodule or of the gland has much the same significance. Such changes in the thyroid are often associated with a sense of pressure or with some tenderness. If such symptoms are produced by the carcinoma, the lesion is likely to be rapidly growing and anaplastic or, if less anaplastic, it has transgressed the capsule of the gland. In either case, the symptoms are late and of unfavorable lesions. A nodule said to have appeared recently usually, in fact, has been present for some time but has only recently been discovered by the patient. Hemorrhage into an adenoma and certain types of thyroiditis may cause localized changes quite indistinguishable clinically from those resulting from carcinoma.

Perhaps the best clue to the presence of a reasonably early (in the sense that the lesion is resectable) carcinoma, apart from the mere presence of a nodule, is the character of the nodule. The important point here is that the nodule differs on palpation from other nodules in the gland or from the surrounding thyroid tissue. The irregularity of carcinomatous nodules and their relative fixation within the gland have been discussed. A carcinomatous nodule, although traditionally firmer than a benign nodule, may not be particularly hard and may, in fact, be definitely softer than many benign nodules. In this connection, calcification in a nodule does not exclude the possibility of a malignant lesion, since calcification in a malignant nodule, particularly in papillary lesions, is fairly common.

In cases in which the involvement of the thyroid is more extensive, the consistency is as a rule firmer than that of benign goiters. This, coupled with surface irregularities or an outgrowth beyond the general profile of the gland, is most suggestive of cancer. Riedel's struma (woody or fibrous thyroiditis) is associated with identical findings. The clinical diagnosis in cases of Riedel's thyroiditis should invariably be carcinoma, since the gross findings, both clinically and at operation, are identical in the two conditions.

With advanced carcinoma, the thyroid, or that part of the gland involved, becomes fixed to surrounding structures. Although lesions of this extent are almost invariably inoperable, the fixation occasionally is due to mere wedging of a large goiter in the superior strait of the chest.

Malignant invasion of the posterior or posteromedial parts of the capsule may be undetected on examination; deeply situated lesions may in fact be undiagnosable until after such invasion has occurred. The clue to the presence of the lesion is provided by carcinomatous involvement of the recurrent laryngeal nerve, which leads to fixation of the corresponding vocal cord and to hoarseness. Fixation of a vocal cord because of pressure of a benign thyroid nodule may also result from mediastinal tumors or from aneurysms of the great vessels, and occasionally it is observed in cases of mitral stenosis. In the absence of such lesions, the finding is presumptive evidence of carcinoma of the thyroid.

The symptoms produced by malignant invasion of other structures are always late and usually indicate inoperability. Dysphagia is usually due to malignant infiltration of the esophagus or pharynx and not to mere pressure, while stridor usually results from distortion or compression of the trachea and only occasionally from actual infiltration. The esophagus presents little barrier to infiltration, while the trachea fascia is quite resistant. In late or particularly in terminal cases the trachea does become infiltrated. The intratracheal malignant tissue may bleed or obstruct the airway. Similarly, the great arteries of the mediastinum and neck resist invasion but ultimately may be eroded with resulting hemorrhage and death.

TYPES OF MALIGNANT LESIONS

The diversity of histological features of cancer of the thyroid and the extreme variation in biological behavior have combined to make pathological classification most difficult. The rather simple classification favored by us at present is probably the most familiar of the classifications currently in use and has been found adequate for the grouping of all primary malignant tumors of the thyroid.

1. Papillary adenocarcinoma
2. Adenocarcinoma in an adenoma (malignant adenoma)
3. Anaplastic adenocarcinoma
4. Epithelioma
5. Sarcoma

PAPILLARY ADENOCARCINOMA

Lesions of this type account for at least 60 per cent of carcinomas of the thyroid. Among current cases the proportion of papillary lesions is probably even greater. Malignant adenomas formerly were seen more frequently than papillary lesions, whereas currently lesions of the latter type are three or four times as common as malignant adenomas. The explanation for the change is not entirely clear. It may well have to do with the decline in the absolute number of cases of adenomatous goiter that has occurred during recent years. Papillary adenocarcinomas vary in size from a few millimeters in diameter to huge tumors filling the lower cervical and upper mediastinal regions. They tend to be small, the usual lesion measuring not more than two or three centimeters in diameter. They develop either from adenomatous or from extra-adenomatous tissue and are usually associated with fairly marked local fibrosis. The fibrosis is more marked in the case of extra-adenomatous lesions which, as a result, are extremely firm, than in the case of the adenomatous lesions.

Papillary adenocarcinomas are easily recognizable microscopically by their papillary structure. The entire lesion may be papilliferous; more usually the tumor is made up in part of solid masses of malignant cells. Follicle formation is not unusual in some part of the tumor. More rarely, virtually normal-appearing follicles distended with colloid may be seen. As with other carcinomas of the thyroid, the histological pattern tends to vary from region to region; a major or minor part of the tumor, however, always has a papillary structure.

In keeping with their grade of malignancy, the growth of papillary lesions is slow. In fact, a lesion of this type may be present for years without evident change and without invasion of surrounding structures. In spite of their slow progression and low grade, the nonencapsulated tumors have a marked tendency to metastasize to regional lymph nodes. Cervical or mediastinal lymph nodes are found involved in approximately half of all cases at the time of operation. Nodal involvement may be massive or limited. Curiously, the metastatic deposits in lymph nodes tend not to invade the capsule of the nodes to involve surrounding tissues. As a result, involved lymph nodes do not become fixed and are, practically without exception, resectable. Furthermore, the metastatic deposits tend not to recur locally. This property is not shared by the primary lesion, which is slowly but definitely invasive. Ultimately, the primary lesion tends to invade the capsule of the thyroid and neighboring tissues. Distant metastatic growths are unusual even in neglected or recurrent cases. Local, unresectable extensions preclude the possibility of cure in a far greater proportion of cases than does distant spread.

Two variants of papillary adenocarcinoma have attracted special attention. These are the so-called tumors of lateral aberrant thyroid origin and the small papillary lesions occasionally found in thyroids removed for some other reason, usually because of Grave's disease. In the usual case in which the diagnosis is tumor of lateral aberrant thyroid origin, several or many of the cervical lymph nodes are enlarged, whereas the thyroid is normal on clinical examinations or contains a relatively inconspicuous nodule. The patient commonly is a young adult or a child. For some years such deposits of papillary tissue in the lateral cervical region were considered to have developed from the lateral anlagen of the thyroid, hence the name. This conception is no longer tenable. There is always a primary papillary lesion in the thyroid and the papillary tumors in the lateral cervical regions are metastatic growths in cervical lymph nodes.

Small papillary lesions, usually a few millimeters in diameter, are occasionally found in thyroid tissue resected for some other lesion. Such lesions occur in approximately 0.4 per cent of thyroids resected because of exophthalmic goiter. The papillary tissue is usually surrounded by rather dense fibrosis, which is responsible for their having been called "sclerosing tumors of the thyroid." They differ in no way from other papillary adenocarcinomas. If the lesion is recognized before the incision is closed, total lobectomy should probably be carried out. If discovered several days after the thyroidectomy, re-exploration of the thyroid is probably inadvisable. Involvement of cervical lymph nodes is almost never observed with such tiny lesions.

ADENOCARCINOMA IN AN ADENOMA

(Malignant Adenoma)

The malignant adenomas were formerly the commonest of the thyroid carcinomas, from 40 to 60 per cent of all thyroidal carcinomas having been of this type. As previously mentioned, the relative proportion of malignant adenomas is decreasing, so that currently they are definitely less common than the papillary lesions. They are well encapsulated, although infiltration of the capsule may ultimately occur. They tend to be materially larger than papillary adenocarcinomas, varying in size as do benign adenomas. The cut surface is said to have a more or less distinctive salmon-pink color in contrast to the brown or yellow-brown color of benign adenomas. Almost without exception they are of low-grade malignancy.

Probably no other malignant lesion has troubled the pathologist more than malignant adenoma. Indeed, the criteria of malignancy in this type of tumor are still not settled to the satisfaction of all pathologists. The difficulty lies in the fact that the histological structure of the malignant adenoma may be virtually indistinguishable from that of a benign adenoma. Some thirty years ago, Graham concluded that, while cystological changes are adequate to differentiate the benign from the malignant lesion in possibly 70 per cent of cases, in 30 per cent the distinction cannot be made. Graham concluded that the most consistent evidence of malignancy in such lesions is vascular invasion and that such invasion, regardless of cystological changes, is necessary to enable one to make the histological diagnosis of malignant adenoma. Wegelin, in 1928, discussing the same problem, stated that the histological structure of "mestastasizing adenomas" is identical to that of benign adenomas. Other pathologists have continued to depend on cytological differences to distinguish the benign from the malignant adenomas. With the realization that carcinomas capable of metastasizing could have a histological appearance virtually identical with that of benign adenomas, the problem of apparently benign tissue well removed from the thyroid was resolved.

In certain classifications, Hurthle-cell carcinoma is considered as a distinct type. This is a well-encapsulated lesion distinguished histologically by large, more or less uniform cells containing coarse eosinophilic granules. Its biological behavior probably does not differ significantly from that of other malignant adenomas. Benign adenomas composed of Hurthle cells are occasionally seen, and Hurthle cells are often seen in adenomas along with other types of cells. In my opinion, there is little reason to classify Hurthle-cell carcinomas separately from other malignant adenomas, or when diffuse, from any anaplastic carcinoma.

So long as the malignant adenoma remains within its capsule, there is no possibility of lymphatic spread, since adenomas have no lymphatics. After capsular invasion, the malignant cells reach the lymphatics of the parenchyma of the thyroid and lymph-borne metastatic growths can occur. As intimated previously, the cells readily invade blood vessels within the adenoma so that blood-borne metastatic growths may develop at any time. Permeation of veins and local thrombus formation as well as tumor emboli are fairly common. The malignant adenomas thus differ sharply from the papillary lesions with respect to metastasis. With the former, the lymphatics become involved late, if at all, and lymphatic spread is unusual; with the latter, the lymphatics are involved early and there is consequent frequent lymphatic spread, while blood-borne metastatic growths are far more unusual.

ANAPLASTIC ADENOCARCINOMA

All other types of adenocarcinoma of the thyroid, from the standpoint of biological behavior, can be considered in one category. They are anaplastic, rapidly growing lesions of great histological and cytological diversity. The follicular pattern is usually completely lost. The anaplastic cells may be round, spindle-shaped, small, or large, and giant cells are common. Lesions made up of small round cells may resemble lymphosarcomas, while those composed chiefly of spindle cells suggest fibrosarcomas. In the more recent Mayo Clinic series, as reported by Pemberton and Black, less than 20 per cent of carcinomas of the thyroid were of this type. Anaplastic adenocarcinomas may develop in a pre-existing goiter or within a nongoitrous thyroid. They infiltrate the capsule of the thyroid early to involve surrounding structures and metastasize by both lymphatics and blood stream. The acute, fulminating carcinomas of the thyroid are of this type. Usually their course is rapid but occasionally they progress far less rapidly than would have been predicted from their histological structure. Almost invariably, regardless of treatment, by the time spread has occurred within the capsule of the thyroid, the ultimate outlook is hopeless.

EPITHELIOMA

Approximately 1 per cent of the neoplastic lesions of the thyroid are squamous-cell epitheliomas. Their origin is obscure but they probably arise from small nests of squamous-cell epithelium occasionally seen in thyroid tissue. While experience with such lesions is most limited, without exception they have been found inoperable or have proved incurable.

SARCOMA

There is still some disagreement concerning the question of sarcoma of the thyroid. Ewing and probably the majority of pathologists consider sarcoma quite rare. Others, including Wegelin and Graham, regard many of the extremely anaplastic lesions as sarcomas. The response to irradiation of certain of the small round-cell malignant lesions suggests that they should be classified with the lymphosarcomas rather than with the anaplastic adenocarcinomas. They are virtually always rapidly fatal except for the unusual lesion that responds to irradiation as do the lymphosarcomas.

The treatment of cancer of the thyroid is primarily surgical. Irradiation is of secondary importance, being used, for most part, in cases in which not all malignant tissue can be resected. The extent of the operative procedure is governed by the type and extent of the local spread of the carcinoma. The conception of radical removal of the primary lesion along with the tributary lymphatics en masse is not particularly applicable to lesions of the thyroid because of the anatomical relationship of the thyroid to neighboring vital structures. Furthermore, there is so much evidence indicating that radical dissections in the case of certain types of lesions are needless, while, in the cases of other types of lesions, such dissections are useless.

Operability. In practically all cases, the lesions should be explored surgically. The only exception to this generalization would be the unusual case in which the lesion is so hopelessly extensive and fixed that it can neither be resected nor the trachea freed sufficiently to permit tracheostomy. With less extensive lesions, even after distant metastatic growths have developed, as much as possible of the primary carcinoma should be removed in an effort to preserve the airway and to prevent or relieve compression of the esophagus. Fixation of the thyroid does not necessarily indicate inoperability, since the fixation may not be due to malignant infiltration. As will be discussed subsequently, when treatment with radioiodine is considered, there are other important reasons for removing surgically as much of the carcinoma as possible as well as uninvolved thyroid tissue in all cases considered suitable for treatment with this agent.

Papillary Adenocarcinoma. As with other types of thyroidal carcinoma, the thyroid is approached through the usual incision utilized for the thyroidectomy. The involved lobe is removed totally, the recurrent laryngeal nerve being preserved unless it is actually involved. The two parathyroid glands on the involved side are usually necessarily sacrificed. Since the primary lesion is invasive, the involved lobe is excised as radically as possible. Multicentric deposits are common, as is spread to the opposite lobe. If both lobes are involved, it is usually possible to preserve a remnant of the thyroid on the less involved side along with the parathyroids and the recurrent laryngeal nerve on that side. Total thyroidectomy is occasionally indicated with sacrifice of all parathyroids. The sacrifice of both recurrent laryngeal nerves is practically never necessary.

The question of cervical dissection of lymph nodes is still somewhat unsettled. Most writers are currently agreed that prophylactic dissections are not indicated. All nodes in the immediate vicinity of the thyroid are removed as a matter of course, but more extensive cervical dissections are not carried out unless there is obvious involvement of nodes. Any current controversy has to do largely with the extent of the dissection of the lateral cervical regions when involved nodes are present. Complete lateral cervical dissection, removing all nodes from clavicle to mastoid with sacrifice of the sternocleidomastoid muscle and internal jugular vein in all cases, is advised by some. Others believe that a more limited dissection, removing only the group of nodes in which spread has occurred and saving the sternocleidomastoid and internal jugular vein, is adequate. The necessary exposure is secured by extending the thyroidectomy incision cephalad along the posterior border of the sternocleidomastoid muscle. Occasionally a second incision made paralleling a skin fold over the upper deep jugular nodes is advisable. I have long believed that limited dissections are as effective in controlling the disease as are block dissections, and the cosmetic result is far more pleasing. On the other hand, in cases with involvement of many nodes, particularly in older patients in whom the cosmetic result is of less importance, there can be few objections to block dissections. An adequate number of patients have been treated in each way to indicate that the ultimate results are comparable. Limited removal of individual, involved nodes through inadequate, small incisions is to be strongly condemned because subsequent more adequate dissections are made far less satisfactory by the resulting scarring.

Adenocarcinoma in an adenoma. The malignant adenomas are usually not locally invasive. They atend, however, to invade blood vessels so that blood-borne metastatic growths are characteristic. The appearance of a distant metastatic growth is occasionally the first clear evidence of the presence of the carcinoma. Since the tumor has no lymphatics, metastasis to regional lymph nodes cannot occur until the capsule of the tumor has been infiltrated, a late event in the course of the lesion. As with the papillary lesions, the involved lobe should be excised totally through the usual incision used for routine thyroidectomy.

The operative field should be carefully inspected for gross evidence of venous spread. If any of the thyroid veins are thrombosed, the thrombosed vein should be resected in continuity with the involved lobe. In advanced cases this may necessitate resection of the superior and middle thyroid veins along with the segment of deep jugular vein delineated by the two sets of thyroid veins. Care should be taken not to dislodge the clots from the thrombosed veins. With this in mind, the jugular vein may well be ligated above the superior thyroid vein and below the inferior thyroid vein before the resection is begun. The resection of veins not thrombosed grossly is less rational.

While there can be little objection to the removal of obviously involved cervical lymph nodes, there is little place in the treatment of the malignant adenomas for the routine prophylactic removal of the cervical lymph nodes or for extensive cervical dissections when involved nodes are found. By the time the cervical nodes become involved, which is a late and somewhat unusual event, blood-borne metastatic growths will almost certainly have developed or the primary lesion will have become inoperable locally.

Anaplastic adenocarcinoma. Treatment of all anaplastic lesions of the thyroid is most disappointing. In spite of all therapeutic efforts of any type, by the time such lesions have spread beyond the thyroid, they are almost without exception incurable. They tend to grow rapidly, to metastasize early by way of both the lymphatics and the blood stream, and to infiltrate beyond the thyroid before the diagnosis is made. Every effort should be made to remove the primary lesion if only to prevent obstruction to the trachea. However, the risk of radical resections of anaplastic carcinomas that have spread beyond the thyroid is not warranted, since the chance of cure is practically nil.

PALLIATIVE RESECTION

Palliative surgical treatment has a most important place in the treatment of carcinoma of the thyroid. It is usually impossible to determine resectability, except in the most advanced cases, prior to surgical exploration. If the lesion proves inoperative locally, as much as possible of the malignant tissue should be resected. Similarly, subsequent external irradiation is more effective after resection of a large portion of the malignant tissue, since the treatment can be limited to smaller areas. In more advanced cases the surgical procedure may have to be limited to biopsy and the provision of an airway. An extended effort to free the trachea from the carcinomatous mass is warranted in all cases in which surgical exploration is attempted. The restoration and maintenance of the airway are, in fact, among the principal aims of the palliative procedure.

Tracheostomy should be strongly considered in any case in which an extensive dissection is carried out in the immediate vicinity of the larynx and trachea. The indications for the procedure are even more definite when large masses of malignant tissue must be left behind or when irradiation is contemplated. As a rule, establishing the tracheostomy at the time of the original palliative procedure not only adds greatly to the safety of the procedure but also is technically easy. In marked contrast, the attempt to find and open the trachea in the presence of tracheal obstruction owing to recurrent carcinoma is both extremely dangerous and technically difficult. I have occasionally, in such neglected cases, first passed a bronchoscope to maintain the airways during the trying dissection necessary to find the distorted and displaced trachea.

The question of gastrostomy is occasionally raised in advanced cases with obstruction of the esophagus. In my opinion the procedure is rarely if ever indicated.

External Irradiation. Considering the extensive experience with external irradiation in treatment of carcinoma of the thyroid, it is surprising to find so little agreement in the literature as to its effectiveness. It was formerly so relied upon that postoperative irradiation, at least, was advised in the great majority of cases. While irradiation was thought far inferior to surgical resection as definitive treatment, it was considered of definite importance in destroying any small deposits that might remain after resection. Evidence of a statistical nature is available indicating that survival rates are somewhat better after resection followed by irradiation than after resection alone. The majority of radiologists were convinced formerly that irradiation not only decreased the rate of growth of practically all types of carcinoma of the thyroid but actually led to a diminution in the size of the lesions.

There is less certainty at present as to the value of irradiation. Objective evidence that the less anaplastic lesions can be particularly influenced is largely lacking. There can be little doubt that the more anaplastic growths will occasionally regress after treatment. The improvement is usually temporary and of limited benefit even palliatively. In many institutions, at present, irradiation is not carried out post-operatively in those cases in which all known carcinomatous tissue has been removed. The current trend is undoubtedly toward this practice, although combined therapy is still employed widely.

In all cases in which the primary lesion cannot be removed completely, external irradiation is usually advisable. The results of treatment in the case of papillary lesions and of malignant adenomas are difficult to evaluate. Measurable decrease in the size of the malignant mass usually does not occur. The response to treatment of an occasional anaplastic lesion may be temporarily quite striking. This is particularly true of lesions that resemble lymphosarcomas histologically. Certainly all such lesions should be treated by a combination of resection and irradiation. Conversely, anaplastic lesions characterized by larger cells, including those resembling fibrosarcomas histologically and giant-cell carcinomas, are little affected by external irradiation.

Interstitial Irradiation. This form of irradiation, using radium needles or radon seeds, to treat small masses of unresectable carcimoma is more rational and probably should be more widely used. It is questionable if any carcinoma of the thyroid has ever been cured by means of external or interstitial irradiation. Prolonged survivals after treatment can be attributed more reasonably to the inherent slow progression of the lesion. Irradiation of metastatic lesions away from the immediate vicinity of the thyroid is largely useless except for the control of pain.

Radioactive Iodine. Radioactive iodine has a limited though definite place in treatment in selected cases of inoperable carcinoma of the thyroid. It has no place in the treatment of resectable lesions, which, of course, should be removed surgically if this is technically possible. The treatment is complex, time-consuming, uncertain with regard to ultimate results, and not without some danger. It should, consequently, not be undertaken lightly or by anyone not thoroughly familiar with the problems. The following brief description of the method has been included only to illustrate these points.

Inoperable extensions or metastatic growths can be treated effectively only if the malignant tissue can be stimulated to concentrate sufficient radioactive iodine. Rarely, a malignant lesion will concentrate iodine even in the presence of the thyroid.

Far more commonly, this function must be stimulated before treatment is possible, and in any case the thyroid gland must be removed totally or destroyed by means of radioactive iodine before the malignant tissue can be treated.

Certain types of lesions cannot be treated with radioactive iodine because they cannot be stimulated to concentrate the isotope. All anaplastic lesions, without exception, are of this type. The Hurthle - cell type of malignant adenoma and papillary lesions with no follicular component, the so-called pure papillary adenocarcinomas, can be stimulated to trap iodine so rarely that an attempt to treat lesions of these types with radioactive iodine is practically always destined to fail. Similarly, malignant adenomas characterized histologically by solid sheets of cells without follicles or colloid formation are a most unfavorable group. Conversely, with all other types of carcinoma of thyroidal origin, the possibility of being able to affect the lesion by isotopic irradiation is sufficiently good to warrant making the attempt. There is a definite correlation between the presence of follicles, particularly with follicular formation and colloid, and the function of concentrating iodine. The probability or improbability that the lesion can be treated can thus be judged from the histological structure of the lesion with fair confidence.

The first step leading to ultimate treatment is the demonstration by surgical exploration of the thyroid that the lesion is in fact not resectable or, in the case of a lesion with distant metastatic growths, that the carcinoma actually arose in the thyroid. As previously discussed, as much of the malignant tissue as possible is resected. If the lesion is of the type, as just discussed, in which there is a reasonable possibility of stimulating uptake, total thyroidectomy is carried out. It the lesion is inoperable because of local extension, it is still often possible to remove practically all, if not all, of the uninvolved thyroid. In any case, as much as possible of the thyroid is removed. In those cases, in which the thyroid cannot be excised surgically, the gland must be destroyed by radioactive iodine. Surgical ablation is much superior to destruction with radioactive iodine, for reasons that are still not entirely clear.

The patient is then given an antithyroid drug, which does not contain iodide, for several months, usually for at least three months. The therapeutic aim should be the production of complete myxedema. This provokes the secretion of thyroid-stimulating hormone, which presumably acts to stimulate the iodine-trapping function of the lesion to be treated. Ultimately, administration of the antithyroid drug is discontinued, and forty-eight hours later the iodine-concentrating function of the lesion is determined by means of a tracer dose of radioactive iodine. If the uptake is adequate, as judged by in vivo counting and by studies of urinary excretion, a massive dose of radioactive iodine is given. The same program is then repeated until there is no longer any uptake or until the patient has received the maximal permissible dose of radioactive iodine.

Many of the quantitative aspects of the treatment are still unsettled and the dosimetry of both external and internal irradiation is beyond the scope of the present presentation. If an adequate uptake can not be stimulated by total thyroidectomy and antithyroid drugs for six months, it is improbable that the lesion can ever be stimulated to concentrate iodine. It is probably wise to withhold external irradiation until all hope of being able to treat with radioactive iodine has been abandoned.

The ultimate results of treatment cannot as yet be evaluated. In many cases metastatic growths apparently have been destroyed. Prolonged survival without evidence of disease has been achieved in others. Treatment has failed in many cases because of the development of metastatic growths that cannot be made to concentrate iodine. At the present time, an attempt to stimulate uptake should undoubtedly be made in all cases in which the lesion is inoperable and is one of the types capable of concentrating iodine.

PROGNOSIS

Prognosis is largely dependent on the type and extent of the lesion. The ultimate outlook after treatment differs so greatly with lesions of different types that the several types should not be grouped together when considering either prognosis or treatment. In the case of the less anaplastic lesions, survival rates are not a particularly adequate measure of success of treatment because of the slow natural course of these lesions. It cannot be assumed that a patient living and presumably well some years after treatment is, in fact, cured nor that the prolonged survival resulted from the treatment. The difficulties in attempting to evaluate different methods of treatment in terms of survival rates are most evident

PAPILLARY ADENOCARCINOMA

In cases in which all of the lesion can be removed, the survival rate does not differ greatly from that of the general population when corrected for age. Local recurrence is not particularly common nor is the appearance of distant metastatic growths after removal of the primary lesion. Metastatic lesions not infrequently become evident in regional lymph nodes even years after removal of the primary. As previously discussed, such involved lymph nodes do not become fixed to surrounding tissues so that, practically without exception, they can be removed. The late development of enlarged cervical lymph nodes definitely does not indicate that the lesion has become inoperable.

If the primary lesion has infiltrated beyond the capsule of the thyroid, the prognosis must be more guarded. Unlike the metastatic deposits in lymph nodes, the primary lesion is infiltrative and ultimately involves surrounding tissues. In cases of this type late recurrences and distant metastatic lesions may, of course, occur and lead to the death of the patient. In terms of survival rates, well over 90 per cent of patients may be expected to survive for five or more years and more than 80 per cent for ten or more years.

Survival rates are far less satisfactory among cases in which the lesion cannot be removed completely, either because of local extension or because of distant metastatic lesions. In spite of palliative treatment, approximately one-third of patients fail to survive for five years, and two-thirds will have died by the end of ten years. The prolonged survival rates among patients with unresectable lesions are probably more attributable to the slow course of such lesions than to treatment. Distant metastatic growths, and particularly pulmonary metastatic lesions, are not incompatible with prolonged survival without symptoms. Death usually results from complications incident to local recurrence, emphasizing again the extreme importance of (1) surgical exploration even after distant metastatic growths have appeared and (2) removal of as much of the primary lesion as possible.

ADENOCARCINOMA IN AN ADENOMA

(Malignant Adenoma)

Survival rates are definitely less satisfactory than those after treatment of papillary lesions. Local recurrence is fairly common, and distant metastatic growths tend to be multiple and to progress with moderate rapidity. In marked contrast to papillary lesions, the presence of involved cervical lymph nodes is an ominous finding, since local lymphatic spread is usually preceded by distant hematogenous dissemination. Death results from local recurrence or distant metastatic growths or both· Among cases in which the lesion is resectable, the five-year survival rate is approximately 70 per cent and that after ten years is somewhat higher than 60 per cent.

In the past, palliative treatment was most unsatisfactory. Survival beyond five years was fairly common, while that beyond ten years was unusual. This discouraging outlook may be definitely changed by the advent of radioactive iodine.

If the lesion has a follicular component, it can usually be stimulated to concentrate sufficient radioactive iodine to permit treatment with this agent. The late results after internal irradiation cannot as yet be judged, but at least a method of some promise for treating such inoperable lesions has been developed.

ANAPLASTIC ADENOCARCINOMA

The results after treatment of anaplastic adenocarcinomas are most unsatisfactory. Whether resectable or not, and regardless of the type of treatment, the outlook is decidedly poor. Less than 10 per cent of patients survive for five years, and less than 5 per cent for ten years. The response of lesions characterized by small round cells resembling lymphocytes to external irradiation may be initially quite striking. Ultimately, however, the treatment usually proves ineffective. It is fortunate that less than 20 per cent of all carcinomas of thyroid origin are of this type, since, for practical purposes, no effective treatment is available.

Hyperthyroidism is the major disease of the thyroid gland which confronts the physician. In some cases hyperthyroidism cannot be treated definitively by medical means, so it is the responsibility of the internist to bring about a euthyroid state before the final phase of treatment is undertaken, whether it is thyroidectomy or the administration of radioactive iodine·

The indications for surgical removal of 90 per cent of the thyroid gland in thyrotoxicosis may be listed as follows:

1. In those patients with diffuse goiter who fail to respond favorably to the anti-thyroid drugs or in whom a permanent remission cannot be maintained.
2. In hyperfunctioning adenomatous goiter, whether there is present single or multiple nodules.
3. In an as yet unknown per cent of patients whose thyroid glands continue to enlarge during the prolonged use of the anti-thyroid drugs. Such enlargements continue to grow so much that they cause dyspnea and dysphagia even when the patient remains in the sitting position.
4. In severe thyrotoxicosis associated with pregnancy. Radioactive iodine will be retained in the

foetal thyroid with possible latent genetic effects.

5. In those patients with moderate or low grade hyperthyroidism who can be properly prepared with Lugol's solution.

The uniformity of opinion as to whether radioiodine or surgery should be preferred type of definitive therapy in any given case of hyperthyroidism would be almost impossible to obtain. Some individuals are still of the opinion that all cases of thyrotoxicosis should be treated by surgical means. This attitude, it seems to me, is unfortunate because of the fact that there are individuals who, under certain circumstances, should be treated by medicinal or isotope therapy. There are also individuals who go to the opposite extreme and think all cases of thyrotoxicosis should be treated with I^{131}. This attitude is also a dangerous and unfortunate one· It is to be noted that irradiation therapy of any type in children has in a relatively high percentage of cases been followed by the development of carcinoma of the thyroid, this therapy having been used for lesions of the upper respiratory tract or thymus. It would seem, therefore, illogical in the extreme to administer radioactive compounds to children suffering with thyrotoxicosis. It is also to be noted that in the treatment of hyperthyroidism associated with pregnancy the use of I^{131} may have a genetic effect because of the fact that the fetal thyroid concentrate iodine, and it has beendemonstrated also in the milk of lactating mothers.

It is my opinion that radioactive iodine should not be used in persons with either a single or multiple toxic nodular goiter because of the high instances of carcinoma in clinically nodules, and although the occurrence in multinodular goiter is not as great, it is still a factor to be taken into consideration.

It is probably advisable to administer I^{131} in cases of:

1. Recurrent or persistent hyperthyroidism after thyroidectomy.
2. Hyperthyroidism with severe cardio-vascular disease or some other concurrent disease.
3. Failure to respond properly to anti-thyroid drugs.
4. In the event a patient refuses to accept surgical or other therapy.
5. In the presence of postoperative persistent exophthalmos.

In patients under 40 years of age it would seem inadvisable to use this type of therapy because of the possibility of delayed carcinogenic activity of this isotope. It will require many years to evaluate fully any possible long-range harmful effects of beta radiation on the thyroid or other tissue. Therefore, I feel that patients under 40 years of age, with uncomplicated hyperthyroidism, should be treated by surgery· In skilled hands, the risk of surgery in this group is minimal. The mortality should be less than 0.5 per cent and the complications are less than 1 per cent. There is very little mortality and the results are excellent.

In the average run-of-the-mill cases of hyperthyroidism, preoperative preparation with Lugol's Solution for two to three weeks is generally sufficient as preoperative medical preparation. In the older group, the 7th and 8th decades, the use of I^{131} should be given serious consideration.

INFLAMMATORY LESIONS OF THE THYROID

ACUTE THRYROIDITIS

Inflammatory surgical affections of the thyroid gland that are unequivocally due to invasion of the parenchyma of the thyroid via the blood stream by pyogenic organisms are quite rare, but do occur. As a rule, such inflammatory lesions are localized to one lobe and, for some reason or other, most frequently in the right side.

The signs and symptoms of such a localized abscess differ in no way from such an affection in any other organ or part of the body. The symptoms are usually pain on swallowing, tenderness, with an elevation of temperature from normal to 100 or 101 and, eventually, redness of the skin over the area.

The treatment for this type of infection is as for other similar abscesses, namely, incision and drainage.

Histologically, the thyroid gland in these cases shows a marked infiltration around the site of infection of polymorphonuclear leukocytes and small lymphocytes; also destruction of follicles with compression of adjacent ones, which give the appearance of a false capsule. Similarly, but very rarely, one may encounter a localized tubercular abscess with caseation which on histological examination shows typical formation of tubercles with surrounding epithelioid cells and tuberculous giant cells with their peripheral distribution of the nuclei. Not infrequently, tubercle bacilli can be cultured from tissue removed at biopsy.

The treatment for such a lesion, in addition to the antibiotic drugs, namely, para-aminosalicylic acid and streptomycin, would be lobectomy, removing with a wide margin the entire lesion. Not infrequently in the past a mistake in diagnosis of tuberculous thyroiditis has been made due to the fact that during involuting processes in the thyroid gland colloid escaping through the burned out or ruptured follicles into the interstitial tissue produces a foreign body reaction, which attracts giant cells to the locality of the escaped colloid. However, these giant cells do not have the typical peripheral nuclear distribution but on the contrary the nuclei are centrally placed·

SUB-ACUTE THYROIDITIS

This inflammatory process in the thyroid gland comes on insidiously with a slow but gradual enlargement of usually the right lobe followed by the isthmus and extending over and including the left lobe of the thyroid gland. As in an acute thyroiditis the first signs and symptoms are enlargement of the gland with pain on swallowing, accompanied by tenderness, with an elevation of the temperature in the first week running up to 101 and 102. After about a week or two weeks the entire thyroid gland is enlarged, brawny, and definitely increased in consistence. It can be differentiated clinically, however, from other cases of diffuse enlargement of the gland by the fact that it comes on rather acutely and has a definite febrile reaction. The white blood count is not elevated, as a rule, and the disease will subside spontaneously, with the gland returning to its normal size and consistence in a period of three weeks to six months. Biopsies of the gland in the acute stage have revealed a marked lymphocytic infiltration but very little, if any, polymorphonuclear leukocytes.

The treatment for this condition is non-surgical, but since the advent of cortisone there have been some reports in the literature that this condition has responded rather promptly to the administration of cortisone. X-radiation therapy is definitely contraindicated.

HASHIMOTO'S STRUMA

This is a questionable inflammatory process but undoubtedly it is due to marked lymphocytic infiltration of the thyroid parenchyma and involves both lobes. The thyroid greatly enlarges and becomes very markedly increased in consistence. The enlargement is diffuse and the patient becomes aware of a sense of pressure on her trachea and a sense of difficulty in breathing in the recumbent posture. The enlargement of the thyroid then is discovered and the question again arises as to whether or not the enlargement is due to a malignant change.

The basal metabolic rate and the radioactive iodine uptake in these cases are usually normal, or possibly sub-normal. On account of the difficulty in differential diagnosis this affection of the thyroid gland should be operated upon. At the operating table a rubbery-like consistence of the thyroid gland which is far greater than the normal thyroid consistence, and also the enlargement of the gland, are immediately noted. The circulation in these glands is very much reduced and there is also an absence of any enlarged lymph glands in the deep cervical chain. In cutting across the lobe a slight yellowish color to the parenchyma sometimes varying from white to a lemon yellow will, to the experienced eye, reveal the identity of the lesion, which can be confirmed also by frozen section· The problem in these patients is to decompress the trachea, leaving as much of the right and left lobes as possible, for otherwise postoperative clinical hypothyroidism or even myxodema may occur. It is a mistake to do more than take out the isthmus of the gland for when an isthmectomy is done the lateral lobes can no longer press on the contiguous structures, such as the trachea. The isthmus acts as a fulcrum and when it is removed the lateral lobes have no point of purchase, and thus their power of compression is eliminated. It is incorrect, however, to do a radical double partial lobectomy, because it is totally unnecessary.

RIEDEL'S STRUMA

Both lobes and the isthmus of the thyroid in this condition are diffusely involved and the gland stony, hard in consistence. The patient, as in Hashimoto's struma, usually is aware of an enlargement of the thyroid gland and pressing on the trachea; however, the enlargement of the thyroid gland may be minimal but due to the fact that there is always some clinical doubt as to the exact nature of the lesion, an exploratory operation should be performed. A biopsy is taken and sections show a marked fibrosis not infrequently associated with solitary areas of calcification. In one case, which was the first one ever operated on at The Johns Hopkins Hospital, I was forced to use rongeurs to remove the isthmus. The true nature of this affection can be immediately determined at the operating table by the appearance of the gland, which is usually white, anaemic, and very difficult to cut with a scalpel. The thyroid parenchyma, due to this scarring, is very much reduced and therefore the radio-iodine uptake and the basal metabolic rates are subnormal. An examination along the internal jugular veins reveals no enlargement or involvement of the deep cervical lymph glands. Whether or not this condition is a continuance of a chronic inflammatory process, of which Hashimoto's struma is a precursor, is controversial. Patients who have died of other conditions unrelated to the thyroid gland that have been operated on for Hashimoto's struma some years previous, show no change in the histological structure of the gland; and there is not one bit of evidence to prove that one condition merges into the other but the therapeutic endeavor is absolutely the same in both. In other words, in Riedel's struma as in Hashimoto's struma, only the isthmus should be removed and for the same reason. If in Riedel's struma the gland is allowed to remain in situ, the pressure on the gland will become so great that eventually a tracheostomy will have to be performed, so it is essential that an isthmectomy be done and that the trachea be completely decompressed. The remaining lobes of the thyroid gland should be left in situ to provide sufficient thyroid function to prevent the patient from becoming hypothyroid.

DIFFUSE COLLOID GOITER

Patients with an enlarged diffuse colloid goiter which is usually asymptomatic except for an unsightly bulge or enlargement of the gland in the neck and minimal evidence of hypothyroidism, often present themselves for operation· This is particularly true in pre-adolescent girls who, at that age, sometimes are quite sensitive about an enlargement in the neck.

These patients should not be operated upon for cosmetic reasons. This condition is listed among the aforementioned surgical affections of the thyroid gland merely to warn of the undesirable effects of removing a portion of each lobe to counteract the swelling in the neck. An atrophy of this type can be obtained by oral administration of thyroid extract, with dosage to be determined by trial, and increased or decreased according to the rapidity of the subsidence of the thyroid gland. Double partial lobectomy of the thyroid gland only further embarrasses the already under-production of the secretions of the thyroid gland.

Some Problems of Insect Allergies

W. W. TAYLOR, M.S., M.D.†
Memphis, Tenn.

With the warm months of the spring and summer just ahead of us, we will again be confronted with the problems of insect allergy. Bowen[1] has listed approximately thirty insects as being the cause of allergic diseases. We shall concern ourselves, however, with a few of these, namely: the wasps, yellowjackets, honey-bees, and the ants. This small group of insects has been selected since one of its members is often responsible for a fatal or near fatal reaction. During the warm seasons, it is not unusual to read in the newspaper about an individual who died suddenly as the result of an insect sting and this may be quite upsetting to the physician who reads such an article, since he feels that if a physician had been close by at the time, a life possibly could have been saved.

Sensitization to insects may be due to 1) inhalation or contact with scales or dust from the wings or bodies; 2) injection of venom through the sting; 3) instillation of salivary secretions. Fatal reactions usually occur as the result of stings or bites. Cazort[2] reports a near fatal reaction from ant bites in a man who was working on the pier at his lake cottage. He noticed several ants crawling about his legs but paid no attention to them. Later, a physician passing by this area noticed the man lying on the ground, with pink frothy sputum drooling from his mouth. The patient was pulseless, blood pressure was unobtainable and there were only slight respiratory excursions. The physician immediately gave him epinephrine intravenously and, following, made hurried arrangements for him to be taken to a hospital. After a very eventful course for several days, the patient finally recovered. He then recalled he had noticed the bites of several ants about his ankles but paid no attention to them and went on with his work. That was the last he remembered until recovery in the hospital.

Normally a sting produces some local pain, redness, and swelling. Following repeated stings, however, some persons develop altered or hypersensitive reactions with marked swelling, diffuse urticaria and angio-edema or even severe systemic reactions and, in some cases, death. Severe reactions are not due to toxicity of the venom but instead are caused by the allergenic properties of the proteins contained in the venom.

Recently, Faubert and Stier[3] have shown that the yellowjacket, hornet, wasp and honey-bee contained common antigens. In addition, each insect contains several antigens specific for the individual genus. The factor of specific antigens is important since if a person knows the particular type insect by which he was stung, more definite desensitization treatment can be given him. Often a person receiving such a sting will bring the offending insect to the office for identification. Identification of some of the insects, especially the wasp, may be confusing since the wasp may be either black, red or the abdomen may actually be striated with black and white or yellow and white stripes so that often they are misinterpreted as yellowjackets. Characteristically, a wasp has a fusiform abdomen and an elongated, narrow waist whereas the hornet or yellowjacket has a truncated abdomen and a short waist. Usually, of course, there is no difficulty in identifying the honey-bee or bumblebee. The wasps' nests are flat, open cones usually located in the eaves of porches, barns, garages, etc. Yellowjackets build their nests in the ground, in rocks or between the walls of buildings. As an example of specific antigenicity, the following case is mentioned. This patient was first seen in 1955 and gave a history of having been stung by honey-bees in 1941 and soon after, he became unconscious. Two years later he was stung by a wasp without systemic reaction. He was again stung by a wasp four years later and, again, became unconscious, and a physician who saw him at the time, told the patient that momentarily his pulse, blood pressure and respiration were unobtainable. In 1955, this patient had a similar recurrence. Following these episodes, the patient was treated with wasp and bee antigen and in May, 1957, he was again stung by a wasp but he only had a local reaction at the site of the sting about the size of a half-dollar and swelling lasted for about two days. There were no systemic reactions.

---

†From the Department of Medicine, University of Tennessee, and the Lyle Motley Clinic, Memphis, Tennessee.

SYMPTOMS

The symptoms may vary from local reactions as previously described to systemic reactions. Often the systemic reactions may result in nausea, vomiting, urticaria, cyanosis, pallor, sweating, tachycardia, edema, and even shock, coma or death. Vaughn and Black[4] report necropsy findings of three persons dead from bee stings. The findings were hyperemia of the internal organs, edema of the lungs and larynx, petechial hemorrhages of the skin and mucous membranes.

Hypersensitive individuals may observe that certain insects seem to be attracted to them and one patient observed that this affinity was lost once she had received desensitization treatments. This patient, a white female age 16 years, gave a history of having been stung previously several times by wasps with no systemic reaction. When fourteen years of age, she was stung above the left eye with resultant swelling of the head and neck. One year later she was stung by a wasp and following, she developed a profound weakness and a rapid pulse, finally losing consciousness. She was rushed to the hospital, epinephrine and supportive therapy started, and she remained in the hospital for four days. There was a satisfactory recovery except for a profound weakness which lasted for about thirty days. Later, after having received a dose of only 0.1 cc. of 1-10,000 wasp extract, she was stung again. This time she did not lose consciousness but had an urticaria of her arms, face and neck, and was drowsy for a few days. This patient remarked that although she was in a group of several people when stung, the wasp seemed to select her to the exclusion of other members of the group. After desensitization therapy, the patient, on occasion, was in the proximity of wasps but the insects did not seem to be attracted to her.

McIvor and Cherney[5] have observed that continued residence in flea-infected areas apparently results in the development of immunity to bites by these insects. Individuals treated with flea antigens have observed that they rarely find fleas on their person or on their clothing and, if per chance fleas are found, they seem to be crawling about and fail to bite the individual.

TREATMENT

Emergency Treatment: Treatment consists of either emergency measures or prophylactic therapy such as desensitization injections. If a patient is seen soon after a sting or bite and the site of the sting is detected, 4 minims of 1-1000 epinephrine should be injected into the site of the sting. If on an extremity, a tourniquet should be placed proximal to the sting to prevent spread of the antigen and then another 4 minims of epinephrine should be given elsewhere. The response and severity of the reaction will determine whether epinephrine will be repeated after an interval of time since epinephrine will lose its effect after a matter of several minutes. At the same time an antihistaminic such as benedryl, 100 mgm., may be given intramuscularly. If the patient, when first seen, is unconscious and death seems imminent, epinephrine may be given intravenously. One of the cortico-steroids such as 100 mgm. of hydrocortone also should be given intravenously and followed by parenteral or oral cortico-steroids, depending upon the response of the patient. Also, oxygen should be begun immediately. Though a patient may have signs and symptoms of edema of the larynx with resulting difficult respiration, it is doubtful if a tracheotomy will be of any benefit since this same degree of edema is usually present diffusely throughout the bronchial tree. It is necessary that patients having the more severe reactions be watched for several days in order to be sure that the antigen present does not manifest itself repeatedly

PROPHYLACTIC THERAPY: Identification, if possible, of the insect responsible for the bite or sting is quite helpful in determining the specific antigen to be used. If this information is unavailable and skin testing with insect antigens is not conclusive, then an extract containing a combination of honey-bee, wasp, yellowjacket and hornet antigens may be used. Ordinarily, the extracts are prepared by using the whole body of the insect. Recently, Loveless and Fackler[6] have extirpated the venom sac of some of the stinging insects for specific testing and treatment. Practically, though, the cost of such an extract routinely would probably be prohibitive and so far, the extracts made from the whole insect have proved efficacious.

The patients are carefully skin tested with the antigens, first by the scratch method and then intradermally with each specific antigen. The reactions to these tests will give us some idea as to the beginning dilution with which to start desensitization. The skin tests, at times, may prove confusing since often the patient, who has actually experienced a severe systemic reaction with resulting shock and coma, may show only mild skin reactivity. The initial injections for treatment should be observed carefully to be sure the patients do not develop systemic reactions following even very dilute solutions of the antigens. Because of this probability, the patients are first tested with very weak dilutions of from 1-1,000,000 to 1-100,000 and increasingly stronger dilutions are used until positive skin reactions are obtained.

It is impossible to say just how long therapy should be continued but most authorities advocate continuous treatment, varying from weekly to monthly injections, for a total of three to five years. Theoretically, allowing an insect to sting a patient and then observing the response would be the answer as to whether sufficient immunity had developed. Practically, the patients are instructed to inform the physician of any stings they may accidentally obtain and report the reactions, since the reaction to such a sting is an important factor as to the degree of immunity developed. The author prefers that the desensitization treatments be given intracutaneously since these patients seem to develop more immunity than from injections given subcutaneously.

SUMMARY

1. Patients, hypersensitive to insect stings or bites, may experience fatal or near fatal systemic reactions.

2. Hypersensitive patients may satisfactorily be desensitized to the offending insects.

3. Desensitization therapy may, also, remove the apparent affinity some insects have for these particular individuals.

BIBLIOGRAPHY

1. Bowen, Ralph, Insects and Allergic Problems, S. Medical Journal; 837-841, Sept., 1951.
2. Cazort, Alan G., Little Rock, Arkansas, Personal Communication.
3. Faubert, E. L., Jr., and Stier, R. A., Antigenic Relationships Between Honey-bees, Wasps, Yellowjackets and Hornets, J. of Allergy 29; 13-23, Jan., 1958.
4. Vaughn and Black, Textbook Practice of Allergy, 1954.
5. McIvor, B. C., and Cherney, L. S., Studies on Insect Bite Desensitization, Amer. J. Trop. Med., 21: 493-497, 1941.
6. Loveless, M. H., and Fackler, W. R., Wasp Venom and Immunity, Annals of Allergy, 14; 347-366, 1956.

> The tragedy of life is in what dies inside a man while he lives — the death of genuine feeling, the death of inspired response, the death of the awareness that makes it possible to feel the pain or the glory of other men in yourself.
>
> *Norman Cousins*

Medical Center Miscellany

Second Commencement

With June activities set to jostle May right off the calendar, Medical Center minds are turned toward the school's second Commencement on Sunday, June 8.

Major General William E. Shambora, commanding general at Brooke Army Medical Center, Fort Sam Houston, will deliver the Commencement address at exercises in the First Baptist Church, Jackson, at 4:00 p.m.

The program will begin with the colorful academic procession in which both full-time and clinical faculty members will march.

Candidates for the doctor of medicine degree number 44 while 15 nurses are in line to get their bachelor of science in nursing degrees. Chancellor J. D. Williams will confer diplomas as Dr. David Pankratz and Miss Christine Oglevee present candidates.

The one-day commencement schedule will begin with an alumni breakfast preceding the baccalaureate sermon in Galloway Memorial Methodist Church at 11:00 a.m. Dr. W. B. Selah will preach.

June Postgraduate Courses

The following Wednesday, June 11, interested physicians will attend the first in a series of three postgraduate courses scheduled in June.

As announced by Dr. Louis Rittelmeyer, chairman of the University Medical Center postgraduate education committee, the courses are: Abdominal Surgery, June 11-12; Obstetrics-Gynecology, June 18-19, and Internal Medicine, June 25-26. Additionally, a five-day course for private duty nurses is slated for June 23-27.

Panel discussions, grand rounds and a CPC will encourage group participation in the Abdominal Surgery course. The combined experience and skills of 16 school of medicine faculty members will be brought to bear as speakers consider the acute abdomen, gallbladder and biliary tract, stomach, duodenum and colon, pancreatitis and some diseases of the spleen, roentgen diagnosis, surgical anesthesia and surgical pathology.

Immediately following this course, a two-hour program will be presented by the Trauma Committee of the American College of Surgeons.

The next week, the Obstetrics-Gynecology and Pediatrics departments will present a co-operative refresher course. The June 18 program will take up extra-uterine pregnancies, abnormal presentations and positions, analgesia and anesthesia in labor and delivery, episiotomy, sterility and diabetes of pregnancy. The next morning will be devoted to resuscitation of the newborn.

Winding up the June series for physicians, Internal Medicine will present its course June 25 and 26. Among subjects to be considered are the use of adrenal steroids, electrocardiographic leads, drug therapy in hypertension, diagnosis of anemias and pulmonary vs. heart disease.

A registration fee of $15 is charged for each course. Each is approved for 10 hours Category I (formal) credit by the Academy of General Practice.

Professor of Anesthesiology

Dr. L. W. Fabian has been named professor of anesthesiology at the University Medical Center, effective July 1. He is presently an assistant professor of anesthesiology at Duke University School of Medicine. Dr. Fabian is accepting applications for anesthesiology residencies at University at this time. He replaces the late Dr. G. Bittenbender, first professor of anesthesiology at the Medical Center.

> It is natural to every man to wish for distinction; and the praise of those who can confer honor by their praise, in spite of all false philosophy, is sweet to every human heart; but as eminence can be but the lot of a few, patience of obscurity is a duty which we owe not more to our own happiness than to the quiet of the world at large.
>
> —*Sidney Smith*

MISSISSIPPI ACADEMY OF GENERAL PRACTICE

Luncheon — May 14

Don't forget the Academy luncheon to be held at the M. S. M. A. meeting in Jackson. The time: Noon, Wednesday, May 14.

The place: Bamboo Room, King Edward Hotel.

Arrangements have been made to show the A.A.G.P. film, "Ten Years of Progress." This is an excellent opportunity for prospective members to find out more about the Academy. Wives are invited, too. Steak will be served hot, and the price — $3.00 per plate.

The Dallas Meeting

Dallas was host to 7,431 doctors, and their wives and guests at the tenth annual assembly of A.A.G.P. in March. Registration figures broke all records.

Dr. Fount Richardson of Fayetteville, Arkansas, who spoke in Jackson last January, was unanimously chosen president-elect. Dr. Charles Cooper, of St. Paul, was elected vice-president.

New directors are: Dr. John Paul Lindsay of Nashville, Dr. Paul S. Read of Omaha, and Dr. James M. Perkins of Denver.

The directors chose Dr. John G. Walsh of Sacramento as board chairman and Dr. Albert E. Ritt of St. Paul as treasurer.

Other highlights of the congress of delegates meeting were:

1. The board of directors was authorized to petition the Joint Commission on Accreditation of Hospitals for representation of the A.A.G.P.

2. Presented a survey by the Opinion Research Corporation, Inc., that showed "family physician" to have the most public appeal, delegates decided not to change the name of the Academy.

3. The Congress authorized the board of directors to maintain liaison for preliminary planning with the A.M.A. and Advisory Board for Medical Specialties concerning the establishment of a certifying board for family physicians.

4. A report by the MUSE Committee advocating replacing the rotating internship with a correlated, two-year residency program was referred to the Commission on Education for study.

5. In-hospital sponsorship training programs for practicing physicians were given approval. This had been approved by both the Commission on Education and the Commission on Hospitals.

6. Authorization was given to the Academy to create an education and research foundation for the purpose of supporting research in the professional and economic aspects of general practice.

Mississippians Attend

The following Mississippi Academy members were among those attending the Dallas meeting: Delegates Dr. W. E. Lotterhos and Dr. John B. Howell, Jr.; president, Dr. John C. Longest; president-elect, Dr. A. T. Tatum; vice-president, Dr. Louis F. Rittelmeyer; Dr. Jim Barnett of Brookhaven; Dr. Larry Brisco of Tupelo; Dr. Robert Crowell of Jackson; Dr. William Fitzgerald of Cleveland; Dr. David McLean of Laurel; Dr. J. J. Kazar of Tchula; and Dr. Thomas Ross of Jackson.

Postgraduate Courses

Members will have a good opportunity to get 30 hours of Category I credit next month. The University of Mississippi Medical School will present three postgraduate courses of two days each at the Medical Center in Jackson. The courses are described on the Medical School page of this issue of the *Mississippi Doctor.*

This looks like a good time to catch up on our study credits and our information.

To register, write: Office of Public Information, University Medical Center, Jackson, Mississippi.

INTERPRETING MEDICAL LITERATURE

STAFF OF REVIEW

JOSEPH P. MELVIN, Jr., M.D. .... Cardiology
HARVEY F. GARRISON, Sr., M.D. .... Pediatrics
JAMES D. HARDY, M.D., and STAFF, Department of Surgery, University Medical Center .... Surgery

CARDIOLOGY

THE SPECIAL PROBLEM OF RHEUMATIC HEART DISEASE IN PREGNANT WOMEN

By C. S. BURRELL

(From: Archives of Internal Medicine, Vol. 101, Pages 60 to 66, January, 1958)

Two hundred seventy-seven pregnant women with heart disease, 85 per cent of which was rheumatic heart disease, were studied by this author and his conclusions were that rheumatic heart disease makes up an overwhelming majority of the cardiopathies seen in pregnancy. Mitral stenosis presents the major problem in about two-thirds of the pregnant women with heart disease and can be discussed as quite representative of the entire group. A pregnant woman with mitral stenosis has a high left atrial pressure, due to an elevated ventilation volume. The three principal ways of handling the combination of mitral stenosis and pregnancy are:

(1) The problem can be avoided by terminating the pregnancy, but this, of course, results in a fetal mortality of 100 per cent, has home risks to the mother, and is psychologically bad.

(2) Modification of mitral stenosis by surgery during pregnancy has been advocated by many competent surgeons and some cardiologists, but is opposed by the majority of cardiologists because of the definitely higher risk, the dangers of mis-diagnosis during the state of pregnancy, and chiefly because it is almost never necessary.

(3) Conservative medical management is the possibility which is more sensible and usually quite successful. In this series of patients, there were only three maternal deaths in 198 pregnant women with rheumatic heart disease. One patient with aortic stenosis, in addition to mitral stenosis, died suddenly after interruption of pregnancy. One patient with a twin pregnancy died some weeks after mitral valve surgery (which had not been advised by the author), and one patient with aortic disease died of staphylococcal pneumonia. The rest of the patients were handled conservatively and did quite well. On the basis of this experience, the author concludes that in terms of immediate maternal mortality the results of conservative management are good. In a tremendous majority of cases it is possible to carry women with heart disease through pregnancy, but this statement is contingent upon a thorough understanding and careful application of the principle of the total cardiac burden in pregnancy. Success with which this principle can be applied depends on the patient, the physician and the availability of appropriate consultant services in the community.

Comment: This review is really a footnote to a previous review in the *Mississippi Doctor*, in which the conservative management of mitral stenosis in pregnancy was advocated. I can see no need for operative interruption of mitral stenosis except in the unusual case; the presence of progressive congestive heart failure, the appearance of increase in massive hemoptysis, and possibly the recurrence of arterial embolism during pregnancy in a case of mitral stenosis may force surgery. Otherwise, it should be avoided as conservative management is almost inevitably successful.

PEDIATRICS

Response of the Young Infant to Poliomyelitis Vaccine Given Separately and Combined with Other Antigens. R. Batson, A. Christie, B. Mazur and J. H. Barrick. Pediatrics 21:1-7 (Jan.) 1958 (Springfield, Ill.).

Two groups of infants, each consisting of 50 babies, received poliomyelitis immunization courses. The infants in the first group received 1 cc. of poliomyelitis vaccine at the ages of 6 weeks, 12 weeks, and 10 months or 3 injections at intervals of 6 weeks and 7 months. The infants in the second group were given poliomyelitis vaccine according to the same schedule as those in group 1, with the only exception that the first dose of the poliomyelitis vaccine was administered in the same syringe with pertussis and smallpox vaccines, and the second and third doses of poliomyelitis vaccine were given in the same syringe with diphtheria-per-

(*Continued on page 306*)

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $3.00.

W. H. ANDERSON, M.D. ...... **Editor-in-Chief**
MILDRED P. ANDERSON ...... **Assistant Editor**

MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY

J. Max Roy, M.D. ...... President
Forrest City, Ark.
W. G. Stephenson, M.D. ...... President-elect
Chattanooga, Tenn.
Julian K. Welch, Jr., M.D. ...... Vice-President
Brownsville, Tenn.
Robert Peeples, M.D. ...... Vice-President
Greenwood, Miss.
Ernest J. Stroud, M.D. ...... Vice-President
Jinesboro, Ark.
Thurman Crawford, M.D. ...... Secretary-Treasurer
Memphis, Tenn.

Mid-South Associate Editors

H. King Wade, M.D. ...... Hot Springs, Ark.
Frank M. Acree, M.D. ...... Greenville, Miss.
R. L. Sanders, M.D. ...... Memphis, Tenn.

MISSISSIPPI STATE MEDICAL ASSOCIATION

Howard A. Nelson, M.D. ...... Greenwood
President
Guy T. Vise, M.D. ...... Meridian
President-elect
Geo. W. Twente, M.D. ...... Jackson
Secretary
Rowland B. Kennedy ...... Jackson
Executive Secretary

State Associate Editors

Louis F. Rittelmeyer, M.D. ...... Jackson, Miss.
John T. Bryan, M.D. ...... Meridian, Miss.

The Publication Committee is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.

Address all material for publication to W. H. Anderson, M.D., 104 Hospitality Street, Booneville, Mississippi.

MEETINGS! MEETINGS!

This month your state association holds its 90th Annual Session. The date—Tuesday through Thursday, May 13-15. The place—Jackson, Heidelberg Hotel.

What is the Annual Session, anyway? Why should a busy physician take three days off from his practice to attend this meeting?

The nine hundred people who were there last year could answer both of those questions for you. There are many reasons. But for the moment, let's consider just one of them: This is the *only* time that *all* the members of your association, whatever their field of practice, wherever they may live, get together in the pursuit of a common objective.

What then, is this "common objective"? It is to discuss and hear discussed the matters that are vital to the health and welfare of your patients. This covers a lot of ground. Clinical information will be presented by the speakers at the scientific section programs. Important economic and business matters will be discussed at the House of Delegates and Reference Committee meetings. All these and many other facets of your practice will be topics of discussion in the corridors and coffee shops. In brief—this is the place that doctors *exchange ideas.*

That is the real value of your association's Annual Session. You get the best opportunity of the year to exchange ideas with your colleagues in all fields of practice and from all parts of the state.

Is that worth three days out of your office? If you don't think it is, you need to talk to one of the nine hundred who know better. (L.F.R.)

BREATHES THERE A MAN WHO TO HIMSELF HAS NOT SAID . . .

Our Medical School Grows

The past month Dean D. S. Pankratz and Dr. Joseph Smith of our University Medical Center furnished a most interesting program at a staff meeting of the Northeast Mississippi Hospital. Guests were there from Iuka, Corinth, and Blue Mountain.

Dr. Pankratz talked on the work and progress of our medical school in a most compelling and informative manner. The heart of any Mississippian would swell with pride over his report. Our school is moving upward and onward, while growing a fine medical-school consciousness over the state. Located in our state's fastest growing city, this modern plant is imposing, beautiful, and set in spacious grounds to permit growth. Last year the school graduated 24; in this year's class are 44. The faculty now numbers fifty instructors.

Dr. Smith, whose dissertation was on the heart, discussed mainly the relation of the heart and certain lung conditions. He spoke as one with knowledge. His address enforced the educational strength of our school, just what it can do for the practitioners of the state in the future and in turn the help the school will be to the people.

From his address was evident the marvelous growth and development in the field of cardiology.

A native son, with deep and sincere dedication, Dr. Arthur Guyton has been cited also for his original work on the heart. He is an author with a wonderful mind for research.

Governor and Legislature Favor

Governor Coleman has exhibited a consistently good faith in this facility for human service and the members of the legislature have shown a fine understanding and vision. Members of the legislature, the people over the state, and the service clubs have seen alike in meeting the school's needs for establishment and support.

Dormitory for Nurses

Right now our medical center is in need of a dormitory for nurses. Northeast Mississippi Junior College and Northeast Mississippi Hospital have a promising nursing school under way. The school provides for a three-year course and an R. N. diploma. This school will require affiliation with the University Nursing School at Jackson for the last few months. This new program, while promising to meet the urgent need for three-year nurses, shifts the responsibility of training nurses largely to the state. The project is under the supervision of the Board of Trustees of Institutions of Higher Learning.

Felix J. Underwood Health Building

The Felix J. Underwood Health Building will soon be a reality. It is a tribute to a great man and a great builder in public health. It will stand as a monument to the onward march of medicine in our state and the nation.

We commend the health workers of Mississippi for their gesture of appreciation and honor to Dr. Underwood for his years of outstanding leadership in public health. He retires on June 30.

Veterans' Administration Hospital

It is likely that the thirteen-million-dollar Veterans' Administration hospital will be a reality at the Medical Center.

Rehabilitation Center

We can look over the medical horizon and see many other benefits on the way to our medical school. Its service will soon reach every nook and corner of the state as the center for the most complete hospital system in this nation. Before long we might see constructed a rehabilitation center on the grounds second to none in the South and maybe in the nation.

Surely now we have no man who to himself has not said, "This is our University Medical Center, and henceforth I shall love and support it without stint."

DR. RICHARDSON TO HEAD AAGP

Dr. Fount Richardson of Fayetteville, Arkansas, has been elected president-elect of he Academy of General Pracice. We offer our cordial congratulations to him and hasten to add that this national organization which has served and is serving so magnificently is blessed in its incoming president. In the field of medicine and surgery and in the broader arena of human affairs, Dr. Richardson is one of the most personable and well-informed men. He understands the importance of relating medical service to human actuality, and strives to build health assets, mental, physical, and spiritual. A diplomat of the first order, he will guide the Academy to truer adherence to medical ideals in ethics and service.

News and Comment

LETTER TO THE EDITOR:

The recent report of the Ad Hoc Committee of the Surgeon General of the United States, after weighing the advantages and disadvantages of BCG vaccination, states: "It is believed, however, that the advantages of vaccination outweigh the disadvantages for tuberculin negative persons who are exposed to a definite risk of infection, especially if they cannot be retested frequently with tuberculin."

This committee recommended BCG vaccination for those groups recommended by the American Trudeau Society, the American College of Chest Physicians, the American Medical Association, and the Medical Advisory Committee of Research Foundation.

The specific groups recommended for BCG vaccination by the American Trudeau Society are:

1. Doctors, medical students, and nurses who are exposed to tuberculosis;

2. All hospital and laboratory personnel whose work exposes them to contact with the bacillus of tuberculosis;

3. Individuals who are unavoidably exposed to infectious tuberculosis in the home;

4. Patients and employees in mental hospitals, prisons, and other custodial institutions in whom the incidence of tuberculosis is known to be high;

5. Children and certain adults considered to have inferior resistance and living in communities in which the tuberculosis mortality rate is unusually high.

There have been numerous inquiries from all parts of the United States as to where BCG vaccine may be obtained. In order to assist those interested, the following information is offered:

BCG vaccine may be obtained by any licensed physician in the United States and its territories by writing to the laboratories of Research Foundation and the University of Illinois, the only institutions licensed to produce and distribute BCG in this country. The address of Research Foundation is: 70 West Hubbard Street, Chicago 10, Illinois.

Sol Roy Rosenthal, M.D., Ph.D.
Medical Director, Research Foundation, and
Director, Institution for TB Research,
University of Illinois

LICENSING EXAMINATIONS

The date for forthcoming examinations for license to practice medicine in the state of Mississippi has been released by the State Board of Health.

The examinations are scheduled for June 23 and 24 at the Robert E. Lee Hotel in Jackson.

On June 23, the examination on the first two years of medical study will be held; and on the following day the examination on the last two years of study.

Application blanks for examination are available on request from Dr. R. N. Whitfield, assistant secretary, Mississippi State Board of Health, Jackson, Mississippi.

COLLOQUY ON ADVANCES IN MEDICINE

The Second Oklahoma Colloquy on Advances in Medicine will be held on November 12, 13, 14 and 15. It will be devoted to arthritis and related disorders and is under the joint sponsorship of the Department of Medicine, University of Oklahoma, the Division of Postgraduate Education, Geigy Pharmaceuticals, Wyeth Laboratories, The Upjohn Company, Pfizer Laboratories, and Schering Corporation.

Twelve nationally prominent investigators in their field will participate and present the results of original work from their laboratories. Among the guest speakers will be:

Alfred Jay Bollet, M.D., Detroit, Michigan; R. H. Follis, Jr., M.D., Washington, D. C.; Robert A. Good, M.D., Minneapolis, Minn.; Alexander B. Gutman, M.D., New York City; Ralph Heimer, Ph.D., New York City; C. H. Slocumb, M.D., Mayo Clinic, Rochester, Minnesota; John H. Talbott, M.D., Buffalo, N. Y.; Morris Ziff, M.D., New York City.

On November 15 the University of Oklahoma football team will play the University of Missouri at Norman, Oklahoma. Registrants may apply for tickets by writing the Athletic Ticket Office, University of Oklahoma, Norman, Oklahoma.

Registration will be open to all physicians. Further information may be obtained by writing to the Division of Postgraduate Education, University of Oklahoma School of Medicine, Oklahoma City, Oklahoma.

DEATHS

DR. ESTELLE BABENDREER

Funeral services were held March 13 for Dr. Estelle Turner Babendreer, 86, who died in Ocean Springs where she had resided. She was a graduate of Pulte Medical College, Cincinnati, Ohio.

DR. AGNES BURT CARAWAY

Dr. Agnes Burt Caraway, 37, former member of the Mississippi State Board of Health who had practiced in Shreveport, Louisiana, for several months, died in Shreveport in March. Funeral services were held in Gulfport.

Dr. Caraway was graduated from Louisiana State University Medical School, New Orleans, La., in 1950, and was licensed in Mississippi in 1952.

DR. I. J. SLAY

Funeral services for Dr. I. J. Slay, 69, retired Army physician, were held at the First Baptist Church in Purvis on April 20.

Dr. Slay was with the Army Medical Corps during both World Wars, and retired in 1944 with the rank of lieutenant colonel.

Survivors include his wife; two sons, Capt. H. D. Slay with the Air Force in Dover, Del., and Lt. Col. I. J. Slay, Jr., with the Army in Odessa, Texas; two daughters, Mrs. Earline Deane, Jr., of Los Angeles and Mrs. L. L Willard of Germany, and nine grandchildren.

DR. LEE TURNAGE

Dr. Lee Turnage, health department official, World War II veteran and former Kosciusko physician, died at his home in Fort Walton, Fla., March 19 after a heart attack. He was 43.

Dr. Turnage was the son of the late Dr. and Mrs. J. E. Turnage of Kosciusko. He was born and reared in the Zama community of Attala County. He attended the University of Mississippi and the Tulane University Medical School.

After obtaining his degree he practiced several years in Kosciusko and was head of the health department there. He was a member of the Fred Wasson Legion Post 44 and Central Mississippi Shrine Club. He was a Baptist.

Dr. Turnage served in the Army during World War II with the rank of major.

He left Kosciusko about five years ago to accept a position as head of the health department in Fort Walton. He had been sent by the Florida Health Department recently for a year's special study in health work at Tulane.

He leaves his wife; two children, Johnny Turnage and Diane Turnage, all of Fort Walton; two brothers, Edward Turnage of Jackson, Miss., and Wade Turnage of Newton.

ANNOUNCEMENTS

Calvin R. Bishop, M.D., announces the opening of his office for the practice of obstetrics and gynecology, 824 Adams Avenue, Memphis, Tennessee.

BOONEVILLE NURSING HOME

The policy of this excellent nursing home is to meet the individual needs of the sick and aged, to give the best care to the sick, aged, and convalescent.

We are also prepared to care for surgical patients, invalids, and patients requiring special diet.

Pleasant surroundings — television — furnace heat — air-conditioning — picnic grounds.

OZELLE MULLINIX, Operator
PArk 8-5929 **302 Bridge Street**
Booneville, Mississippi

Some people pretend to think that optimists are cranks, but nothing could be further from the truth. All successful persons are optimists. Every individual who does things in a big way must be one. To be an optimist it is not necessary that you be a cheerful idiot. Optimism is a fixed belief that good is universal. Its acceptance is wholly a matter of choice. You may possess it through the mere act of taking it. If you want to succeed—if you will fill your mind so full of optimism that you will have no room for the slightest doubt or foreboding. You will do this because it pays—for optimism is the bearer of practically every good thing which can come to you.

(*Continued from page* 302)

tussis-tetanus toxoid. The right lower extremity was used for the intramuscular injection of poliomyelitis vaccine. Blood was collected at the time of each injection of poliomyelitis vaccine and also 2 weeks and 4 or more months after the third or "booster" injection; thus, each infant had 5 collections of blood for antibody determinations uniformly obtained from the internal jugular vein.

Poliomyelitis vaccine administered to 6-week-old infants resulted in a satisfactory antibody response. The response to poliomyelitis vaccine mixed with pertussis and diphtheria-pertussis-tetanus toxoid and given as 1 injection was satisfactory. The combination of antigens gave no practical interference with the development of antibodies to diphtheria and pertussis. There was no apparent hazard or adverse reaction associated with combined poliomyelitis-pertussis or poliomyelitis-diphtheria-pertussis-tetanus vaccines. There were no differences in poliomyelitis antibody response after immunizations with separate and combined vaccine injections. The existence of maternal antibodies at the time of poliomyelitis immunization had no apparent influence on the production or persistence of active antibodies. These findings indicate that poliomyelitis immunization procedures can easily be integrated into routine pediatric immunization programs, thereby affording the earliest possible protection.

COMMENT: It has been our practice for a number of years to give the triple vaccine at the same time that we give the smallpox vaccine but not in the same arm since it is evident that the smallpox vaccine takes within a week and the triple vaccine takes from the beginning. The triple vaccine is given at three different times, about 3 to 4 weeks apart. We would be inclined to agree with the authors that it would be perfectly allright to give the polio vaccine at the same time and in the same syringe that we give the triple injections.

HELP WANTED!

Our files are completely depleted of certain back numbers of the *Mississippi Doctor,* and we continue to get requests for a copy that might be several years old.

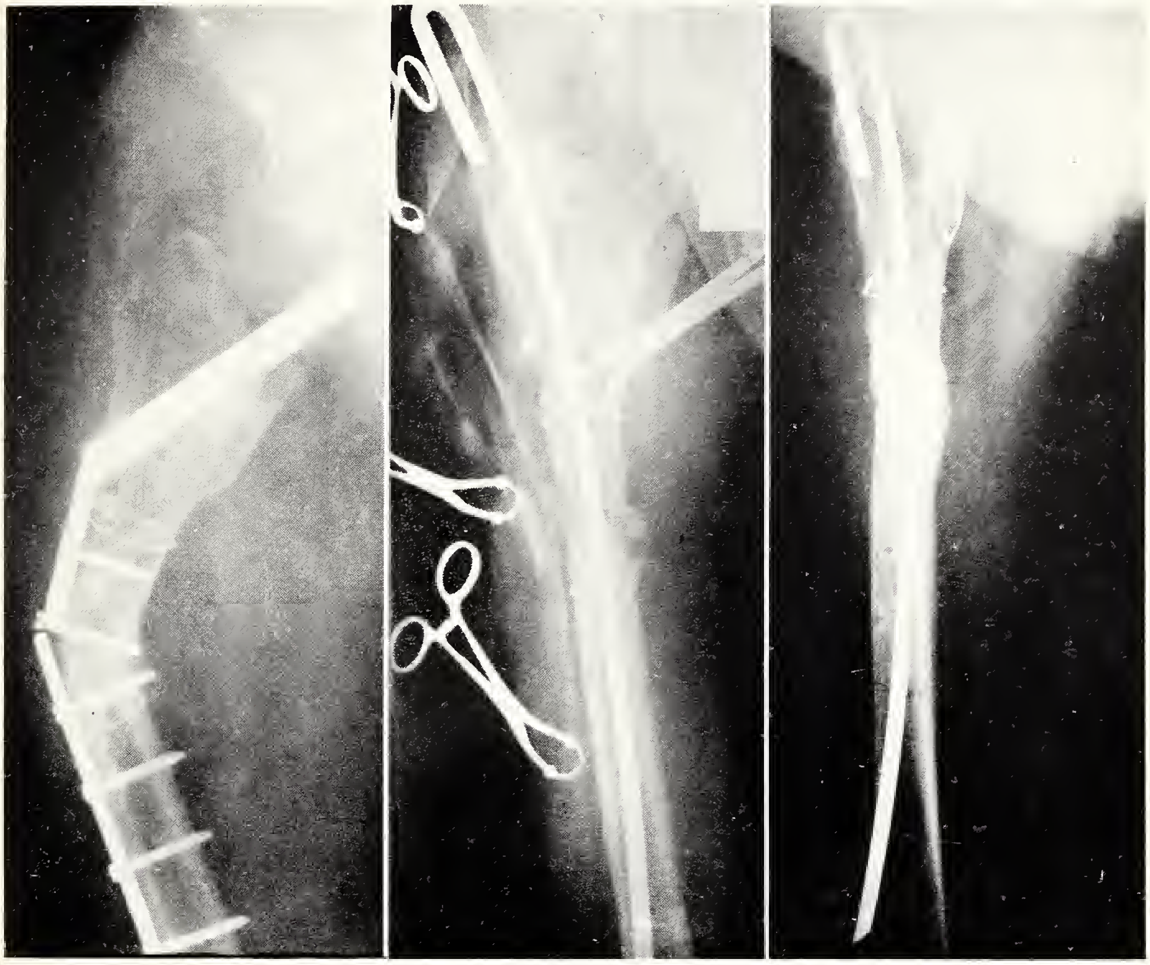
At the moment we need urgently a copy of the issue of September, 1949.

Does one of our readers in the state have a collection of old copies of the *Mississippi Doctor* which he would sell us? *—Editor*

Fracture Problems

Leslie V. Rush, M.D.
Meridian, Miss.

Problem No. 17 of a Series



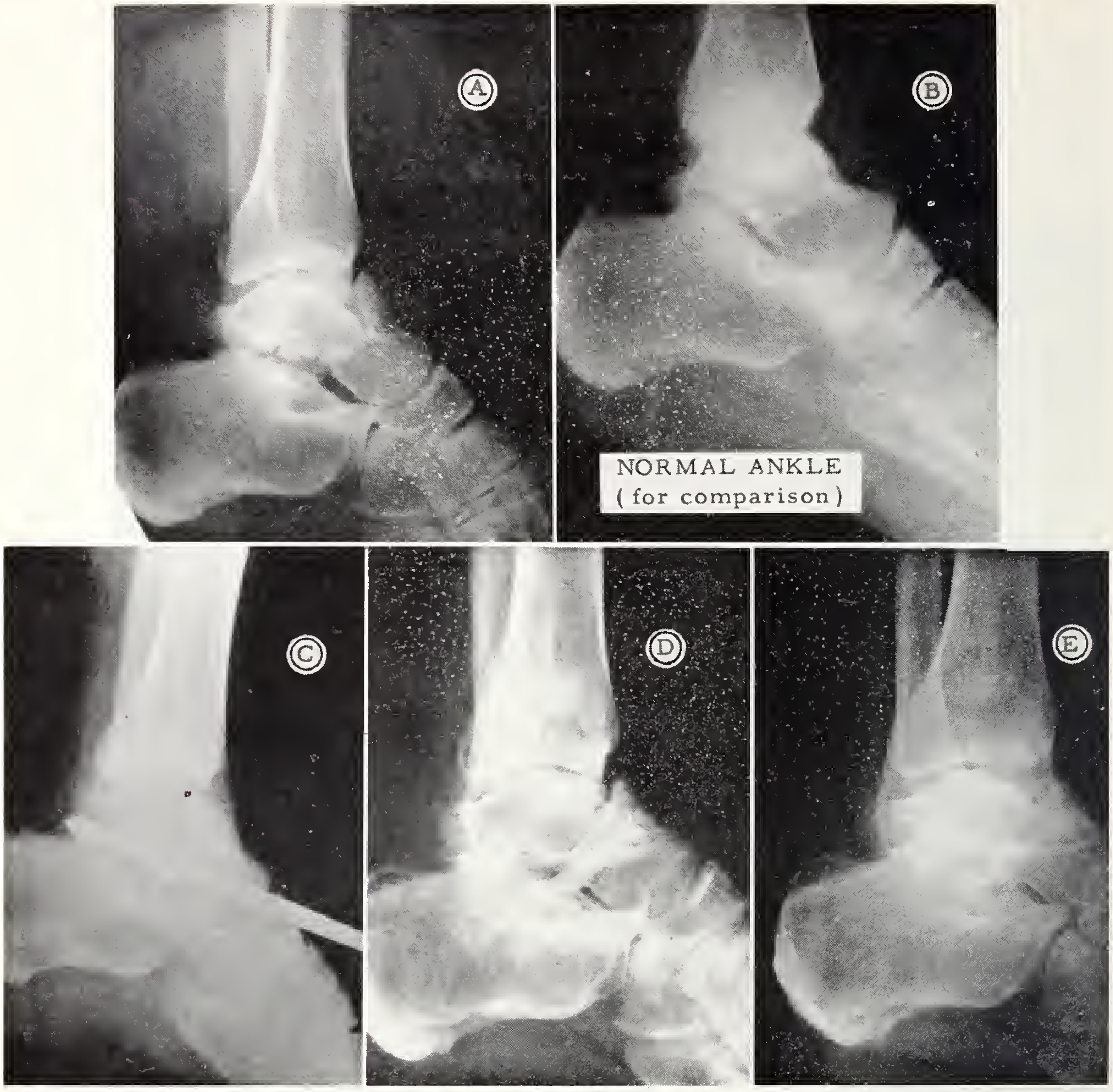
HEALING PROBLEM FEMUR

White female, age 83. Comminuted fracture upper shaft repaired elsewhere two years prior. Gradual lateral angulation occurred with ultimate fracture of plate. Bone extremely osteoporotic. Medullary canal occluded in upper part of distal fragment.

OPERATION: Lateral incision. Internal fixation apparatus removed. Small slot cut in lateral wall of shaft at fracture level. Fibrous union not disturbed. Awl reamer (¼ inch) passed through window in bone and medullary canal reamed in distal fragment.

Angulation forcibly corrected by manual pressure and fracture transfixed by special-type Rush pin. Hooked head sunk deeply into great trochanter. Point of curved pin penetrated lateral cortex of osteoporotic shaft. Angulation thus resisted by three-point pressure, locking the bone fragments.

No external immobilization. Healing shown at five months.



ASTRAGALUS

Problem No. 18

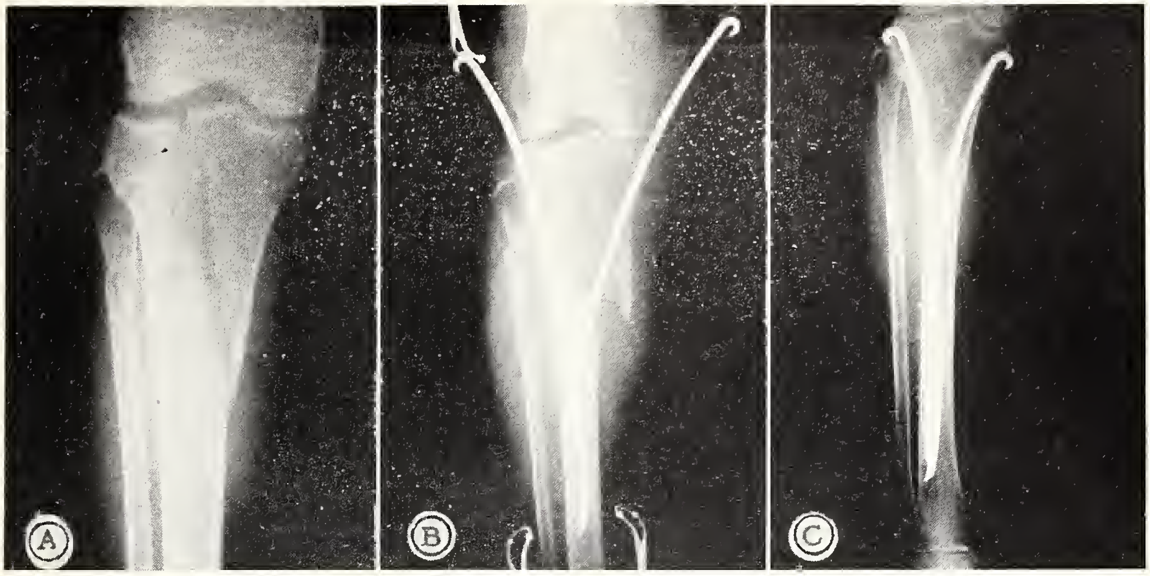
Male, age 53. Vertical comminuted fracture anterior portion of astragalus, five weeks duration. Attempts at closed reduction unsuccessful.

OPERATION: Tibia peg grafts ¼ inch diameter secured.

Antero-medial incision. Oblique openings reamed obliquely across fracture line and across subtalar joint. Procedure done blindly using x-ray control (C). Bone pegs driven into prepared tunnels (D).

Plaster immobilization.

Five-year follow-up: Good fusion and ankle asymptomatic (E).



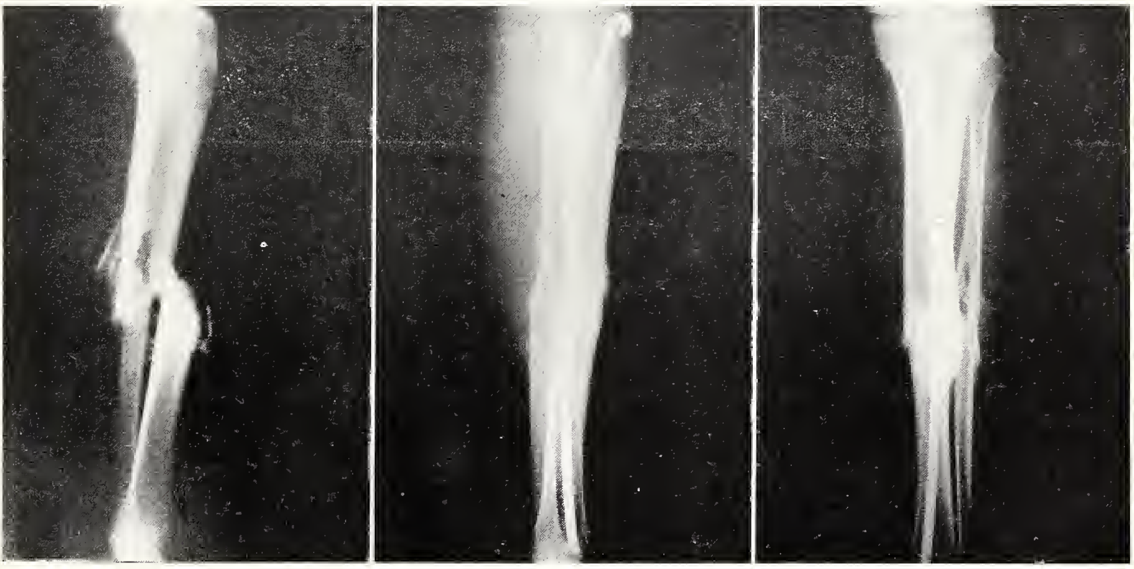
COMMINUTED UPPER TIBIA

PROBLEM NO. 19

Female, age 65. Closed pin fixation.

(A) Note temporary exaggeration of deformity because lateral pin advanced ahead of medial pin. Deformity completely erased when heads of pins were stress relieved and pins driven home.

(C) Healing at three months.

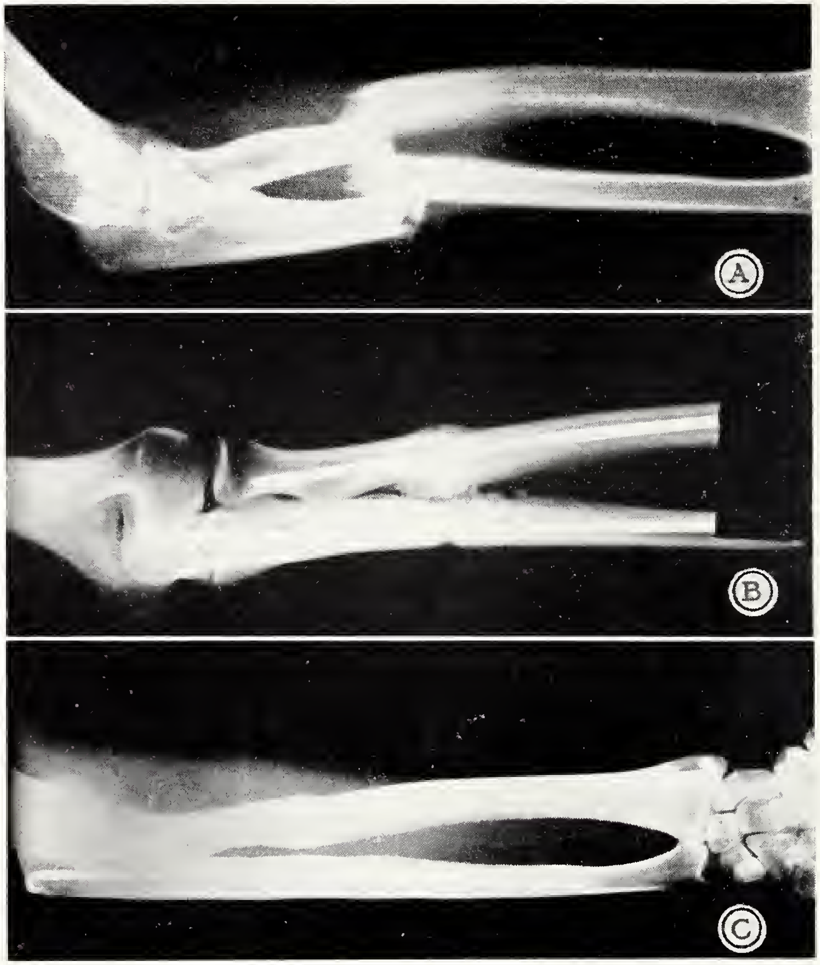


MID-SHAFTS LEG

PROBLEM NO. 20

Male, age 19. Closed pinning (1/4 inch diameter). Fixation stable.

REASONS: (1) Irregular fracture surface. (2) Pin 1/4 inch diameter and of adequate length. (3) Three-point pressure of curved pin to resist anterior angulation. (4) Firm cancellous bone in patient of this age.



SYNOSTOSIS FOREARM

PROBLEM NO. 21

Female, age 24. Open reduction and pinning both bones. Arm immobilized in supination to prevent distraction of oblique fracture ulna. Synostosis evident in six weeks.

At five months bone bridge surgically excised. Pins removed at two years. Good function.

The Mississipi Doctor

Official Organ of the

Mississippi State Medical Association

and the

Mid-South Postgraduate Medical Assembly

W. H. Anderson, M. D., Editor-in-Chief

Mildred P. Anderson, Assistant Editor

* * *

INDEX

June 1957 - May 1958

Volumne 35

* * *

Published at Booneville, Mississippi

AUTHOR INDEX

Alvis, Joel L. 68
Attix, Edward A. 130
Babendreer, Estelle (death of) 305
Banks, E. J. (death of) 98
Barnes, George S. 202
Barnes, Thomas G. 261
Benson, Clifford D. 29
Bernet, Carl P. 204
Biggs, R. H. (death of) 98
Boggess, Julian E. 178
Boswell, Henry (death of) 170, 196, 229
Brantley, Mrs. F. L. (death of) 277
Brevard, Leon Hawkins (biog.) 228
Brown, Mrs. A. E. (port.) 28
Browning, Raymond W. 245
Burman, Richard G. 173
Butler, John C. (death of) 50
Caffey, Shed Hill 233
Callender, Claude G. 183
Campbell, Guy D. 76
Caraway, Agnes Burt (death of) 305
Cepha, Harry G. 173
Clark, W. E. (death of) 252
Colbert, Walter T. 264
Crider, J. O. (death of) 170, 172
Culpepper, J. P. (port.) 144
Curry, W. H. (death of) 277
DeMere, McCarthy 64
Denson, Grover Cleveland 165
Denson, H. C. (death of) 26
Dorrough, C. M. Jr. 41
Ewing, M. Q. 16
Field, Richard J. 161
Field, Samuel E. Sr. 161
Forbes, Neil M. (death of) 50
Forsythe, William E. 123
Fowler, Foster L. 120
French, Lyle A. 231
Garvey, Fred K. 279
Gardner, C. E. 102
Gillespie, George 105
Griffith, R. W. Jr. (death of) 50
Gurdjian, E. S. 7
Gruich, F. G. 177
Hand, W. F. 111
Hardy, J. D. 44
Heslep, Haynes 89
Herring, Emmett 209
Hill, Stanley A. 153
Holman, C. H. Sr. (death of) 252, 277
Holmes, Verner S. 180
Ingram, C. H. (death of) 26
Inmon, W. B. 242
Jarvis, Garth L. 83
Kittrell, John (death of) 229
Knox, I. C. 189
Lamb, Jones W. 137
Langford, H. G. 149
Lewis, Henry L. (death of) 50, 97
Lewis, J. F. 202
Lich, Robert 33
Lindley, John E. 256
Lofstrom, J. E. 7, 51
Long, Felix (death of) 252
Magruder, L. W. (death of) 122
Marshall, Benjamin J. (death of) 277
Marshall, Wallace 157
Matas, Rudolph (death of) 122
Martin, G. H. 236
McCormick, Talbot G. (port.) 75
McGaughey, Everett M. 173
McKinnon, H. L. (death of) 228, 229
McLaurin, J. P. Jr. 239
Melvin, J. P. 164
Morgan, F. J., Jr. 236
Murray, Dwight H. 35, 42
Neal, Robert Ford 210
Neely, Wm. A. 68, 217
Nelson, Howard A. (port.) 24, 118, 194
Newell, Sam (death of) 197
Newton, Michael 38, 109
Nichols, H. Minor 253
Norman, Tom D. 256
Otken, C. H. (death of) 26
Patterson, C. W. (port.) 227
Pennington, Veronica M. 57
Pierce, D. O. (Memorial) 228
Postlethwait, R. W. 102
Raulston, W. R. 190
Reiners, Charles R. 29
Rienhoff, William F. Jr. 284
Rice, James C. 78
Ricks, H. C. 14
Royals, James L. 183
Rush, L. V. spec. supp.
Sharpe, Guy P. 137
Slay, I. J. (death of) 305
Smith, Carl H. 1
Snavely, J. R. 149
Sneed, Ralph 206
Sutherland, C. G. 183
Taylor, W. W. 297
Thornton, W. L. 241
Turnage, Lee (death of) 305
Underwood, Felix J. 23
Waldrep, N. C. (Memorial) (death) 96, 122
Webb, Watts R. 76
Webster, J. E. 7
Wesson, Thomas W. 180
Williams, J. Collins 112
Williams, J. D. (port.) 75, 221
Williams, J. Rice (Memorial) 16
Williams, T. K. Jr. 165
Williford, T. Y., Jr. 215
Wilson, Harwell 99
Windham, John E. 113
Winn, E. H., Jr. 139
Woodward, Fletcher D. 199

SUBJECT INDEX

Accidents
—automotive (Fletcher D. Woodward) 199
Adrenocortical Preparations
—hazards and safeguards in therapy (J. D. Hardy) 44
Alcoholism
—the offspring of alcoholic parents (abst.) 164
Anemia, Sickle Cell
—sickle-cell retinopathy (J. E. Boggess) 178
—parenteral iron in treatment iron deficiency anemia in infants and children (Robert Ford Neal) 210
—sickle-cell tetinopathy (J. E. Boggess) 178
Actinomycosis
—in pregnancy, case rept. (R. W. Browning) 245
Allergy
—some problems of insect allergies (W. W. Taylor) 297
Appendicitis
—in infancy and childhood (abst. by T. K. Williams, Jr.) 165
Atherosclerosis
—abst. (J. P. Melvin) 164
Backache
—traction signs of compression of sciatic nerve roots (Edward A. Attix) 130
Bile Ducts
—cystic dilatation; case rept. (C. P. Bernet) 204
Biliary Tract
—operative cholangiography (T. G. Barnes) 261
Bladder
—dysfunction (Robert Lich) 33
surgical injuries of ureter and bladder (William E. Forsythe) 123
Brain
—occlusive disease of cerebral vessels (J. E. Lofstrom, J. E. Webster, E. S. Gurdjian) 7
Breast, Cancer
(R. W. Postlethwait and C. E. Gardner) 102
—radiotherapy in treatment (James E. Lofstrom) 51
Cardiovascular Diseases
—rehabilitation for cardiac patient (abst.) 51
Deafness
—recognition and management in children (R. Sneed) 206
Edma
—new concept of formation (Wallace Marshall) 157
Editorials
22, 48, 74, 94, 120, 147, 169, 196, 224, 250, 274, 303
Emphysema, Pulmonary
—obstruction (W. R. Webb & G. D. Campbell) 76
Endocarditis, Infectious
—current status of therapy (abst.) 247
Endocrine Glands
—office diagnosis of disorders (H. G. Langford and J. R. Snavely) 149
Forearm
—fractures (S. A. Hill) 153
Fractures
—problems (L. V. Rush) spec. supp.
Gastrointestinal Tract, Hemorrhage
—in the pediatric patient (C. D. Benson and C. R. Reiners) 29
Glucose Solution
—practical concepts on rate of infusion (H. Heslep) 89
Hand
—injuries of with loss of skin (H. Minor Nichols) 253
Hemorrhage, Intra-abdominal
—concealed abdominal hemorrhage (Harwell Wilson) 99
Heart, Block
—ventricular arrhythmias after intravenous sodium lactate (abst.) 18
Hirschsprung's Disease
—follow-up on 200 patients (abst.) 248
Infants, Premature
—problem of keeping premature infants warm or cold (abst.) 19
Insecticides
—poisoning (J. C. Rice) 78
Interpreting Medical Literature
18, 43, 66, 87, 115, 141, 164, 220, 247, 271, 302
Labor, Conduct of
—support during labor (Michael Newton) 109
Marriage
—proposed state legislation (ed.) 147
Medicine, Practice
—ideals are like stars (D. H. Murray) 35
Medicine - Progress
—Mississippi Medicine - Century II (H. C. Ricks) 14
Menstruation, Disorders
—ovarian failure (C. G. Sutherland, J. L. Royals, C. G. Gallender) 183
Mid-South Postgraduate Med. Assembly
—ed. 171, 196, 251, 274
—past-president's dinner 227
Mississippi Academy of General Practice
21, 46, 71, 91, 117, 142, 167, 193, 222, 249, 273, 301
Mississippi State Board of Health
—health building groundbreaking 75
—Felix J. Underwood Health Building 23
Mississippi State Medical Assn.
—ann. meeting 1957 24
—ann. oration: Dr. J. Rice Williams 16
—ann. meeting 1958 251, 275, 303
—ann. meeting-program 269
—president's page 20, 47, 72, 92, 118, 194, 223
—president's address, 1957 14
—Woman's auxiliary 27
Nephrosis
—adrenal hormone therapy (abst.) 247
Ovary
—ovarian failure (C. G. Sutherland, James L. Royals, C. G. Callender) 183
Parathyroid
—functioning adenomas (W. A. Neely, J. L. Alvis) 68
Pediatrics
—patients with infantile primary tuberculosis treated with protected cortisone therapy (abst.) 191
Physicians
—the doctor as a citizen (V. S. Holmes) 180
Placenta, Retained
—(C. M. Dorrough, Jr.) 41
Poisons
—organic phosphorus insecticides (James C. Rice) 78
Pregnancy
—actinomycosis (case report) (Raymond W. Browning) 245
—spec. problem of rheumatic heart disease (abst.) 302
—third trimester bleeding (J. P. McLaurin, Jr.) 239
—vaginal bleeding in last trimester (Michael Newton) 38
—valvuloplasty for mitral stenosis (abst.) 271
Rectum
—implantation recurrence of carcinoma of rectum and colon (abst.) 272

SUBJECT INDEX

Research
—medical investigation importance of (William A. Neely) 217
Retina
—sickle-cell retinopathy (Julian E. Boggess) 178
Rheumatic Fever
—steroid therapy (abst.) 272
—treatment (abst.) 66
Sigmoid, Cancer
—efficacy of extended resection (G. Gillespie) 105
Social Science
—apathy and ignorance in our present crises (J. E. Windham) 113
Societies, Medical
—Amer. Med. Assn. 48
—Amer. College of Surgeons reg. meeting 97, 171
—Amite-Wilkinson 49
—Fifty Year Club
Biographica
Brevard, Leon Hawkins 228
Pins Delivered
Brevard, Leon Hawkins 165
Denson, Grover Cleveland 165
Pierce, Daniel Oliff 165
—Gulf Coast Clinical Society 96
—International Coll. of Surgeons 121
—Medical Library Association 171
—Miss. Div., A.C.S. (annual meeting) 65
—Miss. Trudeau Society 222, 275
—New Orleans Grad. Med. Assembly 25, 146
—Pan-American Women's Alliance 238
—President's page 168
—Southeastern Surgical Congress 25
—Southern Med. Assn. 86, 145, 148
—Southern Neurosurg. Sec. 25
See also: Miss. Acad. of Gen. Practice
Miss. State Med. Assn.
Mid-South Postgrad. Med. Assembly
Spinal Cord, Surgery
—high cervical cordotomy (L. A. French) 231
Splenectomy
—problems in pediatric practice (C. H. Smith) 1
Sphincter Muscles
—transduodenal division of the Sphincter of Oddi (G. H. Martin & F. J. Morgan, Jr.) 236
Stomach, Surgery
—gastrectomy (Jones W. Lamb and Guy P. Sharpe, Jr.) 137
Surgery, Plastic
—McCarthy DeMere) 64
Thrombosis
—thromboembolism (G. S. Barnes & J. F. Lewis) 202
Typhoid Fever
—in children (abst.) 88
Thyroid
—surgical treatment of diseases (W. F. Rienhoff, Jr.) 284
Tonsillectomy
—from pediatricians' viewpoint (T. Y. Williford, Jr.) 215
Tranquilizing Agents
—research findings in phrenotropic drugs (Veronica M. Pennington) 57
University of Miss. Med. Center
—editorial 303
—first commencement 23
—miscellany 6, 73, 93, 119, 143, 166, 195, 221, 244, 270, 300
Urethra, Diverticula
—diag. and treatment in female (R. G. Burman, H. G. Cepha & E. M. McGaughey) 173
Urinary Tract
—infections of the lower urinary tract of the female (F. K. Garvey) 279
Uterus, Cancer
—diagnosis with emphasis upon vaginal cytology (Tom D. Norman, John E. Lindley) 256
Uterus
—congenital anomalies (Samuel E. Field, Sr., and Richard J. Field, Jr.) 161
—uterine rupture (Garth L. Jarvis) 83
Vertigo
—the ever-increasing problem (S. H. Caffey) 233